



### **Purpose and Need:**

The following short reports are a compilation of surveys primarily conducted by park resource management staff (wildlife branch) with the assistance of volunteers, and mainly for calendar year 2009. There are other important monitoring efforts underway through the Northern Great Plains Inventory and Monitoring Program, Midwest Regional Office Wildlife Biologist, Texas A&M University, USGS (Jamestown, ND) and the Prairie Wildlife Research, Inc. Summaries of their findings are attached along with a report on bison from the chief of resource management.

The reports are meant to inform the readers of the many and varied wildlife resources within this 28,295 acre National Park. It is not meant to be a peer reviewed document but instead a quick compilation of some of the work completed by park staff. This document will be added to the park library and the resource management files for documenting the accomplishments during calendar year 2009. Please contact the staff listed below for additional information, sop's, data sheets, copies of complete reports or other reference materials mentioned in this document.

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**Note: All photos within this document are NPS photos unless otherwise noted.**

## **BIRD REPORTS:        Sharp-tailed Grouse Lek Surveys**

Sharp-tailed Grouse lek (dancing ground) surveys were conducted in April to obtain counts of birds using the leks. This information is used in the development of population trend data for Sharp-tailed Grouse within the park.

The peak of attendance by females on the leks is generally April 8 – 22<sup>nd</sup> in South Dakota although due to weather conditions, earlier or later in April may be just as productive. This timeframe normally yields the highest number of birds with both males and females spending time on the leks. Once the females are mated, they no longer have a need to visit the leks, while the male grouse continue dancing into May for additional females that may have not been mated during the peak time period.

It is recommended to begin surveys ½ hour before sunrise and continue looking and listening for birds up until 2 hours after sunrise. The peak of activity appears to be 30-45 minutes before sunrise through the first 45 min.-hour after sunrise. Cloud cover and temperatures do not seem to affect the counts. Calm to light winds are preferable so that the surveyor can hear the grouse on or off the leks. Winds 20-25 mph appear to restrict the activities of the birds.

Ideally, 3 surveys are conducted at each of the 13 known grouse leks in the park. To avoid double counting, the leks are visited on the same morning during the same time period. Four of the leks are located on the southern end of the park while the other 9 are located on the eastern half of the park. Park staff continues to listen for additional grouse leks but each year the adult birds seem to continue using the same leks or can be found in close proximity to one of the previously identified leks.

Normally this type of survey is geared towards counting male birds only but due to the difficulty in distinguishing males from females by the participants ie. visits to the leks where surveyors were not able to determine the sexes of the birds or the birds were flushed and the sex was not determined, resource management staff has decided to use the maximum number of birds counted during the surveys for the development of its trend data. Staff does have information on male and female numbers from some of the volunteers but there are enough discrepancies in the data that staff does not feel confident in the reliability of the information. More emphasis and training to distinguish between the sexes will be incorporated into the spring 2010 surveys.

Weather is a big driver limiting the number of birds that survive and make it to the leks in the spring. Moisture is needed for plant growth and residual cover for the birds while at the same time precipitation (cold, wet weather) in late spring can create problems for nestlings. Short and sparse vegetation are preferred on dancing grounds but tall and dense grassland cover is required for nesting during April through June and throughout the rest of the year. It is also well known in the literature, regardless of the varying opinions, that production success in grouse is a complex relationship between numerous weather factors that influence successful production. Because direct or indirect effects are so multifaceted it is very difficult to say with certainty the

true causes of declines in the Sharp-tailed Grouse population within the park. The possibilities could range from unfavorable weather during spring nesting period, disease (West Nile Virus), high ungulate numbers and/or expanding prairie dog towns (providing low residual cover), years of less than average precipitation, etc.

### **2009 Survey Results:**

**Eastern Half of Park** – the maximum number of Sharp-tailed Grouse using the leks on any one morning was 17. Surveys were conducted on April 8<sup>th</sup>, April 14<sup>th</sup> and April 24<sup>th</sup>. The highest number of grouse (17 birds) was observed on April 14<sup>th</sup>.

Four of the 9 leks on the eastern half of the park had birds using them or there were birds observed in the vicinity of the leks.

**Southern End of Park** – grouse have not been recorded on any of the 4 leks on the southern end of the park since 2007. Eight grouse were observed on 1 of the leks that year. Since 2007, informal searches for birds using the leks have been carried out but little evidence has been found. Other than a few droppings and an occasional sighting of a grouse on the southern end of the park, there has been little activity observed on the leks during the breeding season.



*Sharp-tailed Grouse – male displaying for females on lek # 2*

Reviewing the park files, it appears that the first attempt to survey grouse leks in the park was undertaken in May, 1984. There were 4 known leks at the time (1 on the southern end of the park and 3 on the eastern half). A total of 18 birds were observed (5 on the southern end of the park / 13 on the eastern half). These limited surveys were conducted in the latter half of May compared to the April timeframe which is now being followed. The April timeframe seems to be universally recognized in South Dakota as the best time for recording maximum numbers of birds on the leks.

For comparison purposes: Over the past 10 years, there have been 5 concerted efforts to survey all of the known grouse leks in the park during the months of March/April/May. As was the case in 2009, the data from previous years is incomplete or unreliable as far as breaking down the number of females and male birds on the leks. The numbers below only reflect the total number of Sharp-tailed Grouse on the leks. Even with the less than optimal data, it is still apparent that the number of Sharp-tailed Grouse has declined over the past decade. A more thorough, timely series of lek counts are planned for April 2010.

Date	<b>Max # Birds</b>	Southern end of Park	Eastern half of Park	Comments
1999	<b>91</b>	37	54	Active leks (3 southern / 4 or 5 eastern)
2004	<b>56</b>	19	37	Active leks (2 southern / 4 eastern)
2007	<b>57</b>	08	49	Active leks (1 southern / 4 eastern)
2008	<b>16-18</b>	00	16-18	Active leks (0 southern / 2 eastern)
2009	<b>17</b>	00	17	Active leks (0 southern / 3 eastern)





## **BIRD REPORTS: Breeding Bird Survey (USGS Roadside)**

The 50 stop roadside breeding bird survey was run June 4, 2009. The survey revealed 53 species and 452 individuals. A very “typical” morning with Western Meadowlarks as the most common species detected on 41 of 50 stops. This additional information continues to be added to the park database for developing trend data for bird populations in the park.

This was the 12th consecutive year this roadside breeding bird survey was completed by park staff since it first established in 1998.



*Western Meadowlark*

A notable non-bird sighting was at stop # 5 along Highway 385 at the Bison Flats Pond at about 0545 hours. While glassing the prairie dog town for Burrowing Owls a Black-footed Ferret was watching from a burrow only 60 yards from the highway. The ferret stayed above ground but in the burrow during the 3 minute survey period and was still there as the observer left the stop.

Complete data collected on the Wind Cave BBS route is available from the USGS web site at [www.pwrc.usgs.gov/bbs/](http://www.pwrc.usgs.gov/bbs/) (USGS Results and Analysis – Route Level Analysis – SD – Wind Cave)

Park staff continues to work on an all inclusive bird database. Currently, 11 years of Off Road and Roadside BBS data has been entered into an excel spreadsheet.

## **BIRD REPORTS: Off Road Breeding Bird Survey Point-Transects**

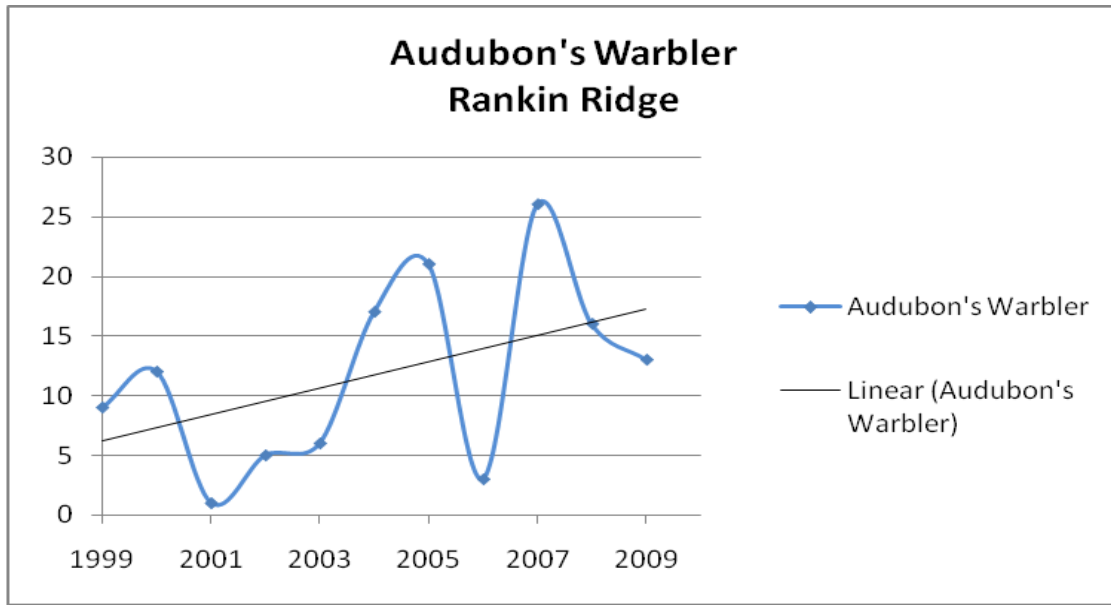
A system of extensive off road point count transects were established along 5 hiking trails at Wind Cave National Park in 1998; Rankin Ridge (Fig. 1), Beaver Creek, Centennial Trail, Cold Brook Canyon and Wind Cave Canyon. A total of 50 points were permanently marked (10 per transect). The primary criterion for location of the points was to situate them in habitats not well represented along the Breeding Bird Survey (BBS) route which primarily covers the grassland habitats of the park. Therefore the points for the off road surveys, as much as possible, were located in ponderosa pine woodland/forest and deciduous riparian habitats. The points are at least 250 meters apart. This follows the suggestions from (Ralph et al, 1993) on monitoring landbirds. These 5 routes, consisting of 10 points each, are conducted once during the breeding season (i.e. 5 mornings during the breeding season, 10 points/morning, beginning at sunrise). Observation methods and data recorded are described in Ralph et al , 1993, with data separated in time (3 minute and 5 minute) and space (<50 meters and > 50 meters) from the observer.



*Fig.1 Richard Peterson (researcher) sets up point number 8 along the Rankin Ridge off-road BBS transect*

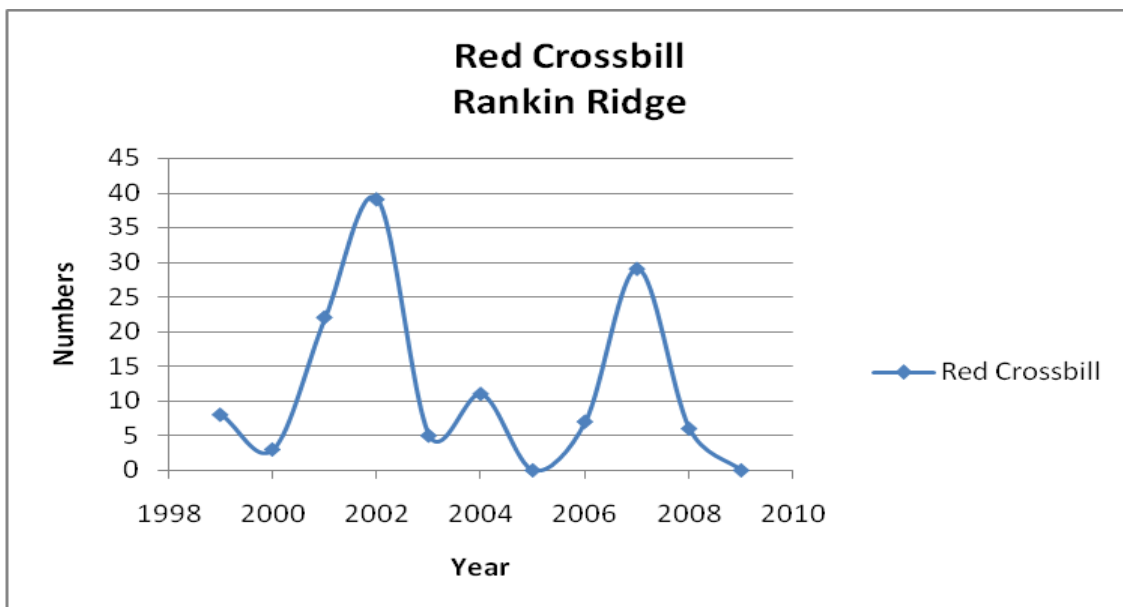
These off road BBS transects have been conducted annually in June from 1999 – 2009. Fig. 2 depicts the 11 year trend of the Audubon's Warbler (using Rankin Ridge data only). While we do have 11 years of data, most likely it is not sufficient to determine long term trends for most species - therefore additional data collection is needed. It will be especially interesting to document the changes in bird species found on the Centennial Trail transect, as this area experienced a wild fire (lightening strike) on July 14, 2000 (data yet to be analyzed).





*Fig. 2 11 years of data on the Audubon Warbler collected on the Rankin Ridge transect (1999-2009)*

Fig. 3 shows the variation of the Red Crossbills counted along the Rankin Ridge transect during the 11 year period (1999-2009). The breeding cycle of Red Crossbills is closely related to food. Crossbills depend on mature conifer trees (coniferous cone crop) for food and nesting generally occurs in areas with the best supply of food. It appears 2002 and 2007 were high “cone crop” years.



*Fig. 3 Red Crossbill numbers from 1999-2009 on the Rankin Ridge off-road BBS transect*

Table 1 on the next page is a list of the total number of bird species documented for all five off-road BBS transects in 2009. A total of 62 species were observed.

## TOTAL BIRD SPECIES FOR ALL 2009 OFF ROAD BBS TRANSECTS

Species	Rankin Ridge	Wind Cave Canyon	Centennial Trail	Cold Brook Canyon	Beaver Creek	Totals/ Species
American Crow	9	7	8	2	9	35
American Goldfinch	1	12	8	12	18	51
American Kestrel			1		2	3
American Redstart		1			1	2
American Robin	25	3	20	19	10	77
Audubon's Warbler	13	4			2	19
Black-capped Chickadee	8	24	5	13	3	53
Black-headed Grosbeak		4	1	6	8	19
Brewer's Blackbird				2		2
Brown-headed Cowbird	14	9	12	8	6	49
Brown Thrasher		3				3
Bullocks Oriole					1	1
Canyon Wren		4		1	3	8
Chipping Sparrow	24	14	15	27	8	88
*Clay-Colored Sparrow		1				1
Cliff Swallow				7	7	14
Common Nighthawk	1					1
Common Yellowthroat					4	4
Cordilleran Flycatcher	1			2	13	16
Dark-eyed Junco		2				2
Dusky Flycatcher		3		14	7	24
Eastern Bluebird			3			3
Eastern Kingbird	1		12		1	14
Field Sparrow		5				5
Grasshopper Sparrow			2	15	3	20
Gray Catbird					1	1
Hairy Woodpecker	2					2
House Wren	11	27	16	22	30	106
Indigo Bunting					4	4
Lazili Bunting		4				4
Least Flycatcher		1				1
Killdeer			4			4
Mountain Bluebird	3	12	11	10		36
Mourning Dove	1	1	6	12	2	22
Northern Flicker (red)	2		17	3	3	25
Northern Flicker (yellow)			1			1
Ovenbird		4		5	2	11
Plumbeous Vireo	9			8	5	22
Prairie Falcon				1	2	3
Red tailed Hawk				3		3
Red-breasted Nuthatch	20			11	5	36
Red-headed Woodpecker			20			20
Red-winged Blackbird			2			2
Rock Pigeon				5	2	7
Rock Wren	4	15	9		5	33

(cont) Species	Rankin Ridge	Wind Cave Canyon	Centennial Trail	Cold Brook Canyon	Beaver Creek	Totals/Species	
Says Phoebe		3	1			4	
Spotted Towhee		31	5	23	27	86	
Townsend's Solitaire	2			1	11	14	
Upland Sandpiper			2			2	
Vesper Sparrow	3		8	10	2	23	
Violet-green Swallow					23	23	
Warbling Vireo					9	9	
Western Meadowlark		16	54	2	13	85	
Western Tanager	6	8	3	5	4	26	
Western Wood-pewee	1	3		17	16	37	
White-breasted Nuthatch	2					2	
White-throated Swift					3	3	
White-winged Junco	4		2			6	
Wild Turkey	1	1	1	3		6	
Willow Flycatcher				2	1	3	
Yellow Warbler		9		10	15	34	
Yellow-breasted Chat		15			14	29	
<b>Total birds/transect</b>	168	246	249	281	305	<b>1249</b>	<b>total birds</b>
<b>Species/transect</b>	25	30	28	32	41	<b>62</b>	<b>total sp.</b>

\* A migrant (non-breeder)

*Table 1 List of bird species detected on 5 off-road bird transects during June 2009*

## Literature Cited

Ralph, C.J., G. R. Geupel, P. Pyle, T. E. Martin and D. F. DeSante, eds. 1993. Handbook of Field Methods for Monitoring Landbirds. Gen. Tech. Rep. PSW-GTR-144. Albany, CA: Pacific Southwest Research Station, Forest Service, USDA. 41 pp.

## **BIRD REPORTS: Nightjar (Poorwill and Nighthawk) Survey Routes**

In cooperation with a nationwide effort coordinated by the Center for Conservation Biology at the College of William and Mary and Virginia Commonwealth University, park staff established and surveyed two 9 mile long, 10 stop, roadside nightjar survey routes. The objectives of the survey are to document the presence, absence, and relative abundance of Common Poorwills and Common Nighthawks, the two nightjar species expected at the park.

The routes were established on top of the USGS Breeding bird survey route already conducted at the park. Nightjar routes are run from late May – early July, after dark, under clear skies, close to the full moon period with the moon above the horizon.

### **Year one findings:**

#### **Route: Wind Cave NP #81911-1**

Conducted June 30<sup>th</sup>

Yielded nightjars on 7 of 10 stops

Common Nighthawks on 4 stops (11 individuals)

Common Poorwills on 6 stops (9 individuals)

4 stops hosted both species

#### **Route: Wind Cave NP #81911-2**

Conducted July 8<sup>th</sup>

Yielded nightjars on 7 of 10 stops

Common Nighthawks on 5 stops (6 individuals)

Common Poorwills on 5 stops (7 individuals)

3 stops hosted both species



*Common Nighthawk*

## **BIRD REPORTS: Raptor Survey**

RM Staff members were able to visit 36 nest locations/territories of 11 different raptor species within the park. These territories include prairie dog towns, cliffsides, forested, woody draws and shrublands.

Locations, availability and use of nests (reproductive success) by raptors varies from year to year depending on a variety of factors such as competition from other species (Great-horned Owls occupying nests previously used by Long-eared Owls or Cooper's Hawk before they've had a chance to re-nest), human activity in close proximity to nests or within nesting territories (fence construction or digging and installing new water lines), low prey/food availability, prescribed or naturally caused (lightning strike) fire and killing of trees or reasons unknown to the observer.

The nesting territories within the park are a combination of ones that have been documented during various studies over the past 20+ years along with the findings by the current resource staff. These territories may be representative of what is found throughout the park but by no means are they all inclusive. There are many back-country, inaccessible areas that are not surveyed on any type of a routine basis.

### **TOTAL ACTIVE NESTS CONFIRMED IN 2009 = 12 (possibly 13).**

#### **ACTIVE NESTS:**

4 Burrowing Owl nests in prairie dog burrows

1 Long-eared Owl

1 Golden Eagle

6 Red-tailed Hawk nests (possibly 7)

## **OWLS:**

Four species of owls (Great-horned, Long-eared, Northern Saw-whet and Burrowing) are known to use the park for nesting in the late winter, spring and summer months. Short-eared Owls are normally just observed during the spring migration.

**Great-horned Owl** – of the 4 known territories, 0 active nests were located. Very little time was put towards owl surveys this year by park staff.

**Long-eared Owl** – of the 6 known territories, only 1 was found to be active (at least 2 fledglings were found in July between the visitor center and picnic grounds).





*Long-eared Owl adult roosting in drainage near the visitor center (April 9, 2009). Nest was not located but at least 2 fledgling owlets were observed in drainage (July 2, 2009)*

**Northern Saw-whet Owl** – 2 locations where birds had been found in cavities in previous years were visited. There was no evidence of nesting found. Whenever this species of owl is listened for, it appears it is quite common during the breeding season in the park (March – June/July). The cavity nests are difficult to locate.



*Adult Northern Saw-whet Owl in dead snag*

**Burrowing Owl** – 4 active nests were located in a prairie dog town on the southeastern section of the park. Three areas were active at the time of the survey, the 4<sup>th</sup> nest location appeared as though the birds had fledged already. Total fledglings observed on August 7<sup>th</sup> = 6-7. Five other prairie dog towns were visited but only the dog town mentioned above had adults that remained long enough to breed and raise owlets.

There were Burrowing Owls present on at least 2 other prairie dog towns earlier in the summer but they did not appear to remain long enough to successfully raise broods.



*Adult Burrowing Owl on edge of prairie dog burrow in Wind Cave National Park  
Photo taken through the lens of a spotting scope*

#### **VULTURES, ACCIPITERS, BUTEOS, EAGLES, FALCONS:**

**Turkey Vulture** – of the 3 known nesting sites for vultures in the park, at least 2 were active, although nests were not observed (the nests are located on cliff sides making them difficult to observe). The third nest is one that is approachable but it did not appear to be active this year.

**Sharp-shinned Hawk** – birds continue to be seen (north/northwest corner of the park) in spring and early summer but to date, there has not been a Sharpie documented as nesting in the park.



**Cooper's Hawk** – of the 4 known territories in the park, only 1 had a bird located on territory. An active nest was not found.

**Goshawk** – there has only been one location where a Goshawk has been found with any regularity. Location was checked on 2 occasions but no birds found.

**Red-tailed Hawk** – there were 6-7 Red-tailed Hawk nests active this year. At least 6 nests were active in the May/June timeframe with adult birds on the nest or with adult birds close by screaming at the observer. The 7<sup>th</sup> nest had at least one adult on territory in the summer but nest was not located to determine activity level. Only 1 of the 7 nests was observed into late June/July to determine nesting success (nestlings that actually survived long enough to fledge from the nest).

The nest that was observed late into the nesting season became a pilot project conducted by the Midwest Region's Wildlife Biologist, assisted by park wildlife staff. From June 19 thru July 3<sup>rd</sup>, two different automated surveillance video camera systems were deployed at a cliff nest site within the park. The project objectives were mainly to develop a portable, inexpensive, and low maintenance video surveillance system and to determine the types and frequency of prey items brought to the nests during the chick-rearing period.

Only 3 of the prey items brought to the nest for the juvenile birds could be clearly identified. Items included a prairie dog, bird species and one snake (most likely a smooth green or a small blue racer). Copies are available of the report dealing with the surveillance of Red-tailed Hawk nest with the automated surveillance systems. Also noteworthy, within a 9 square mile area on the southern end of the park, there were 5 active Red-tailed Hawk nests this year.



*Red-tailed Hawk nest, active June 2, 2009. 1 of 5 active Red-tailed Hawk nests within a 9 square mile area of Wind Cave National Park*

**Golden Eagle** – only 1 eagle nest appeared to be active this year. There were other eagles observed in the area of the park but active nests or new nest sites were not found.



*Golden Eagle nest with 1 eaglet (June 16, 2009)*

**Merlin** – of the 4-6 potential Merlin nesting sites in the park, there were none documented as active this year. Very little time was spent searching for these falcons in July and August due to other pressing issues in resource management.

**Prairie Falcon** – of the 2 regularly active cliff nests in the park, neither appeared to be active this year. A Prairie Falcon was observed in an area that had not had nesting falcons documented before but the drainage does contain cliff habitat that may be suitable for falcons. A pair of Prairie Falcons was heard just east of the park boundary down Wind Cave Canyon.

**Ferruginous Hawk** - a few post breeding season observations of this species were made in late summer and early fall. These were more than likely birds that fledged outside the park on the grasslands to the east or south.

With limited staff time available to put towards a comprehensive survey, it is difficult to say with any certainty what the real success rates of the nesting raptors that made use of the park in 2009. It appears to have been a good year for Red-tailed Hawks nesting in the park, especially on the southern end.

It also appears that many species of raptors (owls, hawks, eagles, falcons) did not nest in the park or simply, the nests were not located due to limited time spent searching for nesting raptors in 2009. It is also noteworthy that in the spring there were 3 storms in 2 weeks during the last week



of March and early April. There were high winds with lots of blowing snow. Nesting may have been delayed or there may have been nests that were blown out of the trees.

To raise the confidence of what we think is happening in the park, at least 3 visits per nest territory should be made per nesting season, once during the breeding/courting period, once after eggs are hatched and once towards the end of the nesting season, prior to the juvenile birds fledging from the nest.



*Cliff nest used by Red-tailed Hawks in 2009 (part of a pilot project to test video camera equipment and to determine the prey items being brought to the nest during the chick-rearing period)*



## **BIRD REPORTS:**

## **Christmas Bird Count**

Wind Cave National Park has been conducting a Christmas Bird Count (CBC) since 1995. It is patterned after the nationwide National Audubon Society effort to document trends in wintering birdlife throughout the United States. The area covered is a 15 mile diameter circle with the center of the circle being the Rankin Ridge fire tower. The count covers all of Wind Cave NP and areas of the Black Hills National Forest and Custer State Park.

In order to be part of the “Official” National Audubon Society CBC, it must be conducted between December 14 and January 5 (inclusive) and a \$5 fee per participant must be paid. Conducting the Wind Cave CBC during this time frame is problematic due to so many Park employees on leave over the holidays. Also, participants have shown no interest in paying the \$5 fee. Though we aren’t “official”, the data gathered during the counts adds valuable information on wintering bird numbers/trends. The Park does provide the information to the local Audubon Societies.

### **2009 Wind Cave National Park Christmas Bird Count**

The “fourteenth” annual Christmas Bird Count (CBC) was initially planned for December 2008 but had to be cancelled due to travel advisories/hazardous road conditions. Therefore, we skipped 2008 and the “official” fourteenth annual Christmas Bird Count was held in the Park and surrounding area on December 13, 2009. The weather was a bit of a challenge with temperatures from -2 to a high of only 3 degrees Fahrenheit and winds 5-22 mph. The snow was quite heavy at times with the Park receiving an additional 3.5 inches during the survey with 7 inches total on the ground. It was a struggle at times for both vehicles and hikers; due to drifting of snow and visibility/sightability problems hindering the observation/identification of the birds.

We had 9 dedicated participants divided into 5 groups. Total survey miles traveled were 182 miles. (Car miles were 172 and foot miles traveled were 10 miles)



*Looking for birds in drainage off NPS 5*



*Cold Springs Creek – 2 Wilson's snipes observed*

The 5 survey groups counted **665 total birds** including **28 species**. This compares to 1194/31 in 2007, 914/30 in 2006, 1465/32 in 2005, 2164/37 in 2004, 831/32 in 2003, 1231/30 in 2002, 1510/36 in 2001, 777/27 in 2000, 1542/41 in 1999, 1362/38 in 1998, 1079/35 in 1997, 484/26 in 1996, and 615/27 in 1995. This year was the **14th** since the CBC was initiated at Wind Cave in 1995. The 14 year average for total bird count is 1130, and the average number of species observed is 32. The following is a list of species observed this year.

<b>SPECIES</b>	<b>Wind Cave</b>	<b>Outside Park</b>	<b>TOTALS</b>
Sharp-tailed Grouse	5	0	5
Wild Turkey	46	147	193
Bald Eagle	3	4	7
Red-tailed Hawk	0	2	2
Ferruginous Hawk	2	0	2
Rough-legged Hawk	0	2	2
Golden Eagle	2	0	2
Wilson's (common) Snipe	2	0	2
Rock Pigeon	3	0	3
Northern Saw-whet Owl	1	0	1
Downy Woodpecker	0	1	1
Hairy Woodpecker	1	1	2
Northern Flicker	1	2	3
Gray Jay	1	0	1
Black-billed Magpie	6	14	20
American Crow	8	76	84
Horned Lark	24	16	40
Black-capped Chickadee	10	18	28
Red-breasted Nuthatch	11	17	28
White-breasted Nuthatch	0	2	2
Canyon Wren	2	0	2
Townsend's Solitaire	3	1	4
American Robin	14	0	14
European Starling	0	14	14
Dark-eyed Junco (WW)	44	100	144
Red Crossbill	3	38	41
American Goldfinch	0	1	1
House Sparrow	0	16	16
<i>Unidentified Buteo</i>	<i>1</i>	<i>0</i>	<i>1</i>
<b>OVER ALL TOTALS</b>	<b>193</b>	<b>472</b>	<b>665</b>

Some interesting observations/thoughts from the 2009 CBC:

- \* Single observations include a Northern Saw-whet Owl, Downy Woodpecker, Gray Jay, and American Goldfinch.
- \* This year we had the highest count of Wild Turkeys (193) since the Wind Cave CBC was initiated in 1995.
- \* This was our lowest number for species observed since 2000 (27). Most likely this was due to the extreme weather conditions (heavy snow in 2009) and winds from 23-46 mph in 2000..
- \* This was the lowest total number of Golden Eagles (02) in the 14 years of CBC. The highest number was 26 in 2001
- \* 3<sup>rd</sup> lowest count for total number of birds since Wind Cave CBC initiated in 1995

Many thanks to all those who participated in the 2009 Christmas Bird Count: Kelly Brownson, Mike Laycock, Barbara Muenchau, Julie Rice, Dan Roddy, Jimmy Taylor, Sandy Taylor, Duane Weber and Jamie Wheeler. And thanks for all the GREAT food! Participants enjoyed a pot-luck of chili, roast beef, cheeses, chips, brownies and cookies, while tallying the numbers observed during the survey.

Next year the Christmas Bird Count will take place on **Sunday December 12, 2010.**

Additional information on the bird count(s) can be obtained from Barb (745-1150) or Dan (745-1157) in the Wind Cave National Park Resource Management Office.



*Adult Bald Eagles perched in snag on northern end of the park*

## **January 2010 Report: Rocky Mountain Bird Observatory**

### **MONITORING BIRDS IN WIND CAVE NATIONAL PARK: 2009**

#### **EXECUTIVE SUMMARY:**

Rocky Mountain Bird Observatory, in cooperation with the National Park Service, designed and implemented a program to monitor birds in Wind Cave National Park in 2008 and 2009. The study design consisted of a spatially balanced sample of 20 sampling units, each consisting of a grid of 9 points from which we surveyed birds. We used Distance sampling to estimate density of avian species with moderate to large sample sizes. For less abundant species we estimated the proportion of sample grids occupied. Estimates of density and occupancy incorporated estimates of detection probability.

We surveyed each point three times during the avian breeding season each year and obtained sufficient numbers of detections to estimate density of 22 species and occupancy rate of an additional 10 species. We were able to estimate densities of five species designated by Partners in Flight as stewardship species or species of concern in the Badlands and Prairies Bird Conservation Region.

Monitoring birds can be an important component of effective ecosystem management. We recommend that the National Park Service continue to monitor birds at Wind Cave National Park following the sampling design implemented by Rocky Mountain Bird Observatory.



*Western Tanager*

#### **RESULTS:**

We detected 4336 individuals of 89 species in 2008 and 3979 individuals of 82 species in 2009 (103 species across both years). Using data from both years, we were able to estimate densities of 22 species. Using data from only 2009, we were able to estimate the proportion of sampling grids occupied by 10 additional species for which we had at least 10 detections.

Contact resource management staff or Northern Great Plains Inventory and Monitoring Program for a complete copy of this 17 page report.

## **BISON REPORTS:      Bison Roundup October 2009**

The 2009 bison roundup was conducted during the week of October 19th. El Aero Helicopter Services from Elkton, Nevada were used again this year. With the use of two Bell 206B3 helicopters (Monday & Tuesday capture) 277 bison were brought in, with 262 of these processed (14 large bulls and 1 cow were not processed). Processed animals included 67 calves (35M 32F) and 195 adults. In 2007, 220 animals were brought in (213 processed).

The main objective of the 2009 roundup was to translocate a total of 113 live bison from the herd; approximately 40 yearling heifers, 40 yearling bulls, 8 two-year old heifers and 25 two-year old bulls. A total of 96 bison were translocated including 66 yearlings (40 bulls and 26 heifers) and 30 two-year olds (23 bulls and 7 cows), giving us a success rate of 85%. Bison were sent to 4 states (MT, KS, IA and ND) and one country (Mexico). This roundup brought the bison herd down to 300-325 animals (~229 adults and ~73 calves). This estimate was derived by adding the number of animals that were processed prior to release, to the animals counted by the helicopter observers that were not brought into the corrals. This number is lower than anticipated, most likely due to a couple of years with lower calf production.

The following were the 2009 Bison Roundup objectives. Most objectives were obtained.

1. Perform Bison Roundup with NO Personal Injuries
2. Perform Bison Roundup with NO Mortality to Bison
3. Perform Bison Roundup with Minimal Injury to Bison
4. Cull approximately 80 yearlings (40 heifers/40 bulls)
5. Cull approximately 33 - 2.5 year olds (8 cows and 25 bulls)
6. Collect blood and tail hair samples from all calves and yearlings
7. Collect blood and hair samples from adults that still need DNA tests completed (Texas A&M University)
8. Identify and cull any trespass bison from herd

There were no employee injuries during the roundup. There were minor injuries to a few bison but no mortalities.

Blood and tail hair samples were collected for DNA analysis on all bison not previously tested. These 156 samples will be analyzed by the genetics lab at Texas A&M University.

All calves were implanted with the electronic transponder chips behind the right ear and a metal eartag attached to the right ear. All processed bison left the head chute with a metal eartag and implant.

All processed adult bison were tested for Brucellosis with negative results. All bison planned for transfer to Mexico were also tested for TB (all negative).



Additional blood was collected on ~ 50 adult bison for archiving of serum with the NPS Biological Resource Management Division (BRMD). Two animals that had previously shown positive titers for malignant catarrhal fever (MCF) were re-tested, and both continue to show positive antibodies. This does not mean they have MCF, but that they have been exposed. We will do nasal and eye swabs on these bison at the next roundup. Pregnancy tests were conducted on three larger yearlings being sent to Mexico; two of which were pregnant.

The Park was able to purchase new adult scales last year after the old ones (over 60 years old) finally broke. There was a bit of a “learning curve” at the beginning of the roundup, and some of the adult weight readings may have been low on day one. After some trial and error, the new system appeared to be working efficiently.

APHIS Veterinarians Dr. Ron Waldrop and Dr. Knight worked the adult operation on Monday and Tuesday, collecting blood for brucellosis testing and samples for archiving. BRMD Veterinarian Technician Vicki Jameson worked the calf operation, collecting blood and tail hair. Dr. Natalie Halbert, Dr. Todd Swannack and Dr. Tulia Defex (Texas A&M) collected blood and tail hair samples for genetic testing in the adult operation. Fall River County Veterinarians Dr. Sheila Lindsay and Dr. Sara Oedekoven signed the health certificates for release of the bison for transfer as well as vaccinating and sealing the trailer for the 23 bison going to Mexico. Dr. Lynn Tesar, (APHIS Veterinarian out of Pierre) and Dr. Margaret Wild (NPS, BRMD Veterinarian out of Fort Collins) were also extremely helpful in obtaining the necessary health certificates required for sending the bison to Mexico. The transfer of bison to Mexico could not have taken place without the assistance of the Mexico liaison, Cindy Tolle (Director of the Tutuaca Mountain School in Mexico).

### **2009 BISON DISTRIBUTION**

Tallgrass Prairie National Preserve, KS	<u>13 Bison</u>	5M (yl) , 4F (yl), 2M (2.5yr), 2F (2.5yr)
Broken Kettle TNC, IA	<u>10 Bison</u>	1M (yl), 2F (yl), 2M (2.5yr), 5F (2.5yr)
Fort Peck Assiniboine and Sioux Tribes, MT	<u>37 Bison</u>	18M (yl), 19M (2.5yr)
Spirit Lake Sioux Tribe, ND	<u>6 Bison</u>	6M (yl)
Standing Rock Sioux Tribes, ND	<u>7 Bison</u>	7M (yl)
El Uno Ecological Reserve, Mexico	<u>23 Bison</u>	3M (yl), 20F (yl)

**TOTAL REMOVED FROM PARK = 96 Bison** 40M (yl), 26F (yl), 7F (2.5yr), 23M (2.5yr)

A lot of hard work went into the 2009 roundup, resulting in the historic event of sending bison to Mexico. In addition, bison were also re-introduced into one of the few remaining tallgrass prairie plant communities at the Tallgrass Prairie National Preserve in Kansas, which is administered in partnership with the National Park Service, The Nature Conservancy and the Kansas Park Trust.

Available number of yearlings for translocation in 2010 is estimated to be around 50 (20 females and 30 males). Since these numbers are so low, an opportunistic roundup without helicopters may be attempted in late summer/fall of 2010. With so few bison available for translocation, the use of helicopters would result in such a high cost per animal that this method may be cost prohibitive.

The final cost for the 2009 bison roundup was **\$51,360.00**. The majority of the 2009 cost was for the use of the helicopters which was \$45,350.85. The helicopters flew Monday and Tuesday for animal capture, and a couple of hours on Wednesday morning to perform aerial census of bison not brought in during the roundup. The charge per bison is **\$535.00**, the highest per bison cost to date (2007-\$425.29, 2006 - \$393.55, 2005 - \$343.27, 2003 - \$234.92, 2001- \$349.15).



*Bison being brought into corrals for processing and possibly removal from park*

## **BISON REPORTS: Wind Cave Bison Find a New Home in Mexico (by Ken Hyde)**

Twenty three bison that were surplus to the management goals of the bison herd at Wind Cave National Park have been donated to Mexico to become the nucleus of a new national herd. They will help begin the process of restoring this species, which is listed as endangered in Mexico, back to prominence once again on the open plains of northern Mexico. On November 2<sup>nd</sup>, the 23 wild bison were prepared for loading into a waiting transport truck to begin a 21 hour drive to the U.S./ Mexico International border.



*Vet. Dr. Sheila Lindsay “sealing” truck in preparation for bison traveling to Mexico (NPS photo)*



*23 bison loaded and ready to travel to U.S. / Mexico International border (NPS photo)*

This loading of the bison was a culmination of several months of preparation spent obtaining the required permits and documentation from a host of U.S. and Mexican agencies. Everything needed to be in order so that a smooth transition from the Black Hills of South Dakota to the plains of the El Uno Ecological Reserve could occur. Special thanks goes to Cindy Tolle of Custer, SD and Director of the Tutuaca Mountain School in Mexico. She, along with a coalition of government, university, and non-profit representatives from the “Grupo de Trabajo Para la Restauración del Bisonte en Mexico” (Work Group for the Restoration of Bison to Mexico) worked through a mountain of details in both countries and were a great help to Wind Cave National Park staff.

As the 23 yearling bison arrived at the International border crossing at Santa Teresa, New Mexico at 8:00 am on November 3<sup>rd</sup>, a host of both U.S. and Mexican government officials went to work processing the animals and ensuring that all of the permits and paperwork were completed in a timely manner. By 11:00 am the bison were ready to proceed through a set of runways beneath the new 20 foot tall international border fence and into a waiting transport truck

on the Mexico side. A great sense of anticipation and excitement could be felt as the more than 20 officials and representatives who had helped to make this exchange of bison possible waited with cameras as the first group of bison came down the alley way. Some of the whooping was intended to keep the bison moving, but much of it was a whoop of joy as the bison loaded up into the truck and a new era of restoring bison to Mexico was begun.



*WICA bison pass under International Border Fence on their way into Mexico and a waiting transport truck (NPS photo)*

As the nearly 3 hour truck ride to their new home near Janos, Mexico came to a close, a large crowd of over 100 people waited at the El Uno Ecological Reserve headquarters. The group included additional government representatives who had made the drive from all parts of Mexico just to see this historic moment. Many in the group were neighbors and friends of the reserve, which is managed by The Nature Conservancy-Mexico, who wanted to see the release of the bison. Once the truck was in place at the unloading ramp, the transport truck doors were opened. Although a large crowd surrounded the pens, a quiet hush fell over the group as the first animals came running down the ramp, and then everyone began talking at once as they got their first look at these stately animals of the Great Plains. After 24 hours in transport trucks, the bison appeared glad to be on solid ground. As soon as the people began to disperse, the bison headed for the feed and water troughs. And as is tradition in Mexico, the people also headed to a waiting fiesta with many of the common foods and drinks of the region that were provided by the TNC and their partners.





*The transport truck hauling the 23 WICA bison enters the El Uno Ecological Reserve near Janos, state of Chihuahua, Mexico on November 3<sup>rd</sup>. (NPS photo)*



*The Wind Cave bison made it safely to Mexico. Part of the large crowd that was on hand to see the arrival (NPS photo)*



A large ceremony was next planned to coincide with the release of the bison following a short quarantine period to observe the bison for any health complications. On Friday, November 27<sup>th</sup>, the Mexican Secretary of the Environment and the Governor of the state of Chihuahua both traveled to the El Uno Ecological Reserve to serve as dignitaries and keynote speakers. They handed out national conservation awards, officially decreed the 1.35 million acre Janos Biosphere Reserve, and then released the WICA bison from the quarantine pen out into the El Uno Ecological Reserve. Over 450 people from all areas of Mexico attended the ceremony.

The bison were hesitant to leave the holding pen with so many people watching and so the Governor (and very quickly his body guards) along with the Mexican Secretary of the Environment jumped into the pen and encouraged them toward the gate. The bison finally headed out in a cloud of dust and took a long run out into their new homeland. They will initially be kept in an approximately 1000 ac. area with several watering holes for observation and will soon have access to an additional 1500 ac. area. Eventually, as the herd builds, they will have access to the entire 40,000 acres in the El Uno Ecological Reserve.



*The new habitat includes large expanses of prairie once inhabited by large herds of bison (TNC photo)*

The bison will be welcomed by large populations of prairie dogs, burrowing owls (nearly 400 nesting pairs were observed in 2009), recently released pronghorn antelope (from New Mexico and Wyoming), and newly released black-footed ferrets from the U.S. It is hoped that the offspring from these bison along with future imports of Wind Cave bison will be the founding animals for additional reserves in 3 other states of northern Mexico.

NPS veterinarians ran additional blood tests on the three largest yearling females, and we were able to notify the partners and staff at El Uno Ecological Reserve that they can expect at least 2 calves to be born during the spring of 2010. That will be an exciting time as this endangered species in Mexico starts the road to recovery.

## **BISON REPORTS: 2009 Post Bison Roundup Population**

Post roundup bison population numbers are typically estimated by adding the number of bison captured during the round up with the number of bison still out in the Park. Before releasing the captured animals, the number of bison out in the park is determined through an aerial survey by park staff. To help solidify our estimate, this total is compared with bison population numbers estimated after the previous roundup, taking into consideration ~ 25 mortalities each year and current year calf crop.



*Wind Cave National Park Bison*

### **Bison captured during 2009 roundup**

- 277 bison brought into corrals
  - 67 calves (35M, 32F), 71 yearlings (45M, 26F), and 139 adults (50M, 89F)
- 96 bison removed
  - 40M & 26F yearlings and 23M & 7F two-year olds
- 181 returned to Park
  - 67 calves (35M, 32F), 114 adults (32M, 82F)

### **Bison not captured (helicopter counts and bison seen without hiptags)**

- 121 (89M, 21F, 6 calves and 5 unknowns)

### **Post roundup bison estimate (using above figures)**

- **~302 bison** (121M, 103F, 73 calves, 5 unknowns)

Current bison population “estimates” using 2007 post roundup numbers

- **331** post 07 RU bison population estimate
- Subtract 25 mortalities 2007/2008 = **306**
- Add 75 calves (2008) = **381**
- Subtract 25 mortalities 2008/2009 = **356**
- Add 77 calves (2009) = **433** (pre 2009 roundup)
- Subtract 96 surplused in 2009 RU = **337**

Comparing the two estimates, and after discussion by resource staff, it was determined the Park would use the estimate of **300-325 bison in the Park post round-up 2009.**

**Please note - the following breakdown by age is from bison identified during the roundup. There are 130 bison of unknown ages that were not brought in; therefore, ages showing zero bison are most likely represented in the unknown age group.**

### Current Bison Population Estimate of 300-325

AGE	Male	Female
0.5	38	35
1.5	5	0
2.5	0	0
3.5	9	6
4.5	2	10
6.5	0	16
7.5	1	5
8.5	0	6
9.5	0	11
10.5	1	11
12.5	0	7
13.5	0	2
14.5	0	1
16.5	0	3
17.5	0	1
20.5	0	1
22.5	0	1
unknown age	<b>103</b>	<b>22</b>
unknow age/sex	<b>5</b>	
Total	159	138
	<b>302</b>	

## Continued 2009 Post Bison Roundup Population

### DISCUSSION OF BISON MANAGEMENT:

The recent plentiful press and conservation organization interest in the WICA bison herd continues to highlight the significance of managing this important resource. Their high level of genetic diversity, lack of cattle gene introgression and brucellosis free status continue to make them highly sought after by conservation groups trying to re-establish wild bison herds to their lands.

The current WICA bison population of 300-325 is the lowest it has been in 10 years and it currently is comprised of a higher number of males than females. These low numbers may reflect natural reductions in a herd subjected to over 5 years of drought in conjunction with an elk population upswing due to limited management options.

In an attempt to maintain genetic diversity and to adjust the sex ratio to a more even sex ratio of 50/50 or 60/40 (fem/male), which in turn will allow for additional calf recruitment, it is the recommendation of the resource staff that the number of cows be increased while striving to increase the total adult bison population (post roundups) to ~450-500.

Since there are limitations on the amount of forage available for our grazers in the Park, it is also recommended that the elk numbers be reduced to the lower end of the population range decided upon in the recently approved Elk Management Plan/EIS. We realize the reduction of the elk herd and the increase of our bison herd will take time but we feel this is an important goal to be striving for over the next 1-4 years.

It is hoped that the Park can accomplish this goal while still providing some surplus bison to the conservation groups who are depending on Park bison to develop their herds.

### 2010 Suggestions for Surplus Bison:

The Park currently has an estimated 73 calves (38M, 35F) and it is recommended that WICA provide 30M and 20F for surplus in 2010. This will leave ~ 15 yearling females in the Park. Typically the Park returns or leaves 8-10 yearling females in the Park. This will help the herd build faster by retaining more young females who will then produce calves over the next 15 plus years.

	Male Yearlings	Female Yearlings
Mexico	10	15
TAPR	2	4
TNC (SD)	1	1
ITBC	17	0
<b>total</b>	<b>30</b>	<b>20</b>

It is also recommended that we attempt an “opportunistic” capture in 2010. We may need to use mineral blocks or other ‘baits’ to lure bison into the large working pastures associated with the roundup facilities. This could help keep the cost for the fewer number of bison (only 50) to a reasonable amount. If we can accomplish a capture (opportunistic or a scheduled roundup, if the opportunistic capture does not work) before the end of October, the USFWS permits obtained for sending bison to Mexico in 2009 would still be valid.

RM staff feels it is important to make these decisions now in order for the designated partners to begin the lengthy paperwork process and to also meet various deadlines associated with interstate and international transfers of wildlife.

Subsequent needs for roundups and the numbers of surplus animals that can be culled will be evaluated on an annual basis and will strongly consider the need to rebuild the WICA bison numbers back up to the 450-500 adults, post-roundup levels. The coordination of this increase in conjunction with a determined effort to reduce elk numbers will help to protect the important plant communities which ‘fuel’ the ecosystem. Continued research on methods to lower costs, reduce safety issues, and better facilitate rounding up bison will be conducted.

WICA will also need to continue to refine the prioritization process used for determining which conservation organizations, tribes and agencies the surplus bison should be provided to. Development of satellite herds that include only WICA bison are currently felt to be very important as a genetic pool reserve in case disease or an environmental catastrophe should impact the WICA bison population in South Dakota.



***Bull bison Wind Cave National Park***



## **BISON REPORTS: Live Distribution of Surplus Bison from 1987- 2009**

(2007) American Prairie Foundation, MT – 5M yrl, 2Fcows, 15F calves

(2006) American Prairie Foundation, MT – 5M yrl, 5Fcows, 10F calves

(2005) American Prairie Foundation, MT – 5M yrl, 6Fcows, 5F calves Total 15M, 43F (58)

(1997) Antelope Island State Park, UT – 5M, 0F Total 5F (5)

(1994) Blue Mound State Park, MN – 2 (male yearlings) Total 2M (2)

(2009) Broken Kettle, TNC, IA – 2M 2.5yr, 5F 2.5yr, 1M yrl, 2F yrl Total 3M, 7F (10)

(2007) Cheyenne & Arapahoe Tribes, OK – 33M, 25F (all yearlings) Total 33M, 25F (58)

(2001) Cheyenne River Game Fish & Parks, SD – 9M 2.5yr olds, 10M yearlings

(2000) Cheyenne River Sioux Tribe, SD – 13M yearlings

(1999) Cheyenne River Sioux Tribe, SD – 18F 2.5yr olds, 11M 2.5yr olds, 25M yearlings

(1992) Cheyenne River Sioux Tribe, SD – 16M, 9F

(1991) Cheyenne River Sioux Tribe, SD – 9M, 25F Total 93M, 52F (145)

(1997) Choctaw Nation, OK – 11M, 7F

(1994) Choctaw Nation, OK – 14M, 6F (Yearlings, 11M 3F; Two yr. olds, 3M 3F)

(1992) Choctaw Nation, OK – 22M, 14F Total 47M, 27F (74)

(2006) Crow Creek Sioux Tribe, SD – 10 F (all yearlings)

(1998) Crow Creek Sioux Tribe, SD - 3M, 9F

(1995) Crow Creek Sioux Tribe, SD - 11M, 14F

(1994) Crow Creek Sioux Tribe, SD – 5M, 7F (all yearlings) Total 19M, 40F (59)

(2009) Fort Peck Tribes, MT - 19M 2.5yr olds, 18M yearlings

(2006) Fort Peck Tribes, MT - 20M Total 57M (57)

(1990) Grand Teton National Park, WY – 1F Yearling Total 1F (1)

(1996) Gros-Ventre & Assiniboine Tribes, MT - 10M, 10F Total 10M, 10F (20)

(2006) Ho Chunk Nation, WI - 36M, 36F

(1998) Ho Chunk Nation, WI - 2M, 1F Total 38M, 37F (75)

**Continued: Live Distribution of Surplus Bison from 1987- 2009**

**(2003) Iowa Tribe of OK – 5M 2.5yr, 5F 2.5yr, 1M yrl, 6F yrl      Total 6M, 11F (17)**

**(1999) Kansas Dept. Of Wildlife & Parks – 5M yearlings      Total 5M (5)**

**(2005) Lower Brule Sioux Tribe, SD – 12F yrl, 12M 2.5yr, 11F 2.5yr**

**(1998) Lower Brule Sioux Tribe, SD - 6M, 3F**

**(1996) Lower Brule Sioux Tribe SD - 3M, 3F**

**(1992) Lower Brule Sioux Tribe, SD – 6M, 4F**

**(1991) Lower Brule Sioux Tribe, SD – 11M, 36F**

**(1989) Lower Brule Sioux Tribe, SD – 28M\*, 25F\***

**(1987) Lower Brule Sioux Tribe, SD – 11M, 18F      Total 77M, 112F (189)**

**(2009) Mexico - 20F yearlings, 3M yearlings      Total 3M, 20F (23)**

**(2003) Modoc Tribe, OK - 13F yearlings, 7M yearlings**

**(1999) Modoc Tribe, OK - 7F yearlings, 5M yearlings      Total 12M, 20F (32)**

**(1997) Nambe O-Ween-Ge Pueblo, NM – 5M, 0F      Total 5M (5)**

**(2003) Northern Cheyenne Tribe, MT - 5M 2.5yr, 3F 2.5yr, 10M yrl, 2F yrl**

**(1994) Northern Cheyenne Tribe, MT – 6M, 9F (all yearlings)      Total 21M, 14F (35)**

**(2001) Oglala Sioux Parks & Recreation Authority, SD – 14M yearlings**

**(2000) Oglala Sioux Tribe (Pine Ridge), SD – 2M yearlings**

**(1999) Oglala Sioux Tribe (Pine Ridge), SD – 1F 2.5yr old, 1M 2.5yr old**

**(1998) Oglala Sioux Tribe (Pine Ridge), SD - 1M, 1F**

**(1997) Oglala Sioux Tribe (Pine Ridge), SD – 1M, 1F**

**(1991) Oglala Sioux Tribe (Pine Ridge), SD – 10M, 0F**

**(1987) Oglala Sioux Tribe (Pine Ridge), SD – 19M, 13F      Total 48M, 16F (64)**

**(1989) Omaha Tribe of Nebraska, NE – 0M, \*5F      Total 5F (5)**

**(2003) Oneida Nation, WI –6F 2.5yr, 10M yrl, 14F yrl**

**(1997) Oneida Nation, WI – 6M, 7F      Total 16M, 27F (43)**

**(1994) Picuris Pueblo, NM – 2M, 3F (all yearlings)      Total 2M, 3F (5)**

**(1999) Ponca Tribe of Nebraska, NE – 19F yearlings**

**(1997) Ponca Tribe of Nebraska, NE – 3M, 2F      Total 3M, 21F (24)**

**(1997) Prairie Band Potawatomi Nation, KS – 8M, 7F**

**Continued: Live Distribution of Surplus Bison from 1987- 2009**

**(1996) Prairie Band Potawatomi Nation, KS - 0M, 13F    Total 8M , 20F (28)**

**(1991) Rosebud Sioux Tribe, SD – 10M, 0F**

**(1989) Rosebud Sioux Tribe, SD – 13M\*, 12F\***

**(1987) Rosebud Sioux Tribe, SD – 8M, 19F    Total 31M, 31F (62)**

**(1994) Round Valley (Indian Reservation), CA – 1M, 4F (all yearlings)    Total 1M, 4F (5)**

**(1995) Santee Sioux Tribe, NE - 11M, 13F    Total 11M, 13F (24)**

**(2000) Shoshone-Bannock Tribes, ID – 10M yearlings    Total 10M (10)**

**(2000) Sinte Gleska University, SD – 6M yearlings**

**(1999) Sinte Gleska University, SD – 2F 2.5yr olds, 2M 2.5yr olds, 10M yearlings    Total 18M 2F (20)**

**(1998) Sisseton-Wahpeton Sioux Tribe, SD - 9M, 6F**

**(1997) Sisseton-Wahpeton Sioux Tribe, SD – 11M, 7F**

**(1996) Sisseton-Wahpeton Sioux Tribe, SD - 7M, 8F**

**(1995) Sisseton-Wahpeton Sioux Tribe, SD - 6M, 6F**

**(1993) Sisseton-Wahpeton Sioux Tribe, SD - 24M, 16F    Total 57M, 43F (100)**

**(1994) Southern Ute Tribe, CO – 2M, 3F (all yearlings)**

**(1993) Southern Ute Tribe, CO - 5M, 4F (1 male gored in pen; 9 delivered)    Total 7M, 7F (14)**

**(2005) Spirit Lake Sioux Tribe – 6M yearlings    Total 6M (6)**

**(2005) Spokane Tribe, WA – 12M yrl, 17F yrl, 8M 2.5yr, 9F 2.5yr**

**(2000) Spokane Tribe, WA – 15F yearlings**

**(1999) Spokane Tribe, WA – 12F yearlings    Total 20M , 53F (73)**

**(2009) Standing Rock Sioux Tribe, ND – 7M yearlings**

**(2005) Standing Rock Sioux Tribe, ND – 11M yearlings, 5M 2.5 year olds**

**(2003) Standing Rock Sioux Tribe, ND – 5M yearlings, 4M 2.5 year olds**

**(2000) Standing Rock Sioux Tribe, ND – 19F yearlings    Total 32M , 19F (51)**

**(2009) Tallgrass Prairie Preserve, KS - 2M 2.5yr, 2F 2.5yr, 5M yrl, 4F yrl    Total 7M, 6F (13)**

## Continued: Live Distribution of Surplus Bison from 1987- 2009

(2007) The Nature Conservancy, SD - 3M, 4F (all yearlings)

(2006) The Nature Conservancy, SD - 2M yrl, 8F 2.5yr

(2005) The Nature Conservancy, SD - 2M yrl, 7F yrl, 3M 2.5yr, 8F 2.5yr Total 10M, 27F (37)

(1995) Tennessee Valley Authority, KY - 4M, 0F Total 4M (4)

(2003) Turtle Mt. Tribe of Chippewa Indians, ND – 5M 2.5yr, 4F 2.5yr, 14M yrl, 16F yrl

(2001) Turtle Mt. Tribe of Chippewa Indians, ND – 32F, 15M(all yearlings) Total 34M, 52F (86)

(2005) Yakama Nation, WA – 10M yrl, 10F yrl Total 10M, 10F (20)

(1998) Yankton Sioux Tribe, SD - 4M, 4F

(1996) Yankton Sioux Tribe, SD - 4M, 4F

(1994) Yankton Sioux Tribe, SD – 1M, 4F (all yearlings) Total 9M, 12F (21)

- Have not found any records of live distribution of bison to the tribes prior to 1987 (so far).
- A total of 1585 bison were distributed live between 1987 – 2009.
- Bison have gone to thirty native tribes (1407 or 89%), one Lakota University (20 or 1.2 %), four State Parks (16 or 1%), four conservation groups (118 or 7.5%), one Country (23 or 1.4%) and one female yearling to Grand Teton National Park.
- \* Total numbers and sex of bison are from the invoices in the 1989 bison files. Does not match the bison computer database. Destination for a few bison in computer database may be incorrect for 1989.



*Bison cow / calf group on prairie dog town in Wind Cave National Park*

## **BISON REPORTS: 2009 (Calendar Year) Bison Mortalities**

Wind Cave National Park Resource Managers have noted that historically an average of ~25 bison die each year within the Park. This number can vary depending on the size/age of the bison herd. In 2009, the Park documented 17 bison mortalities. *(There may have been additional mortalities that were not found by Park staff)* Of the 17 documented mortalities, two were MVA's (motor vehicle accidents). Most often the deaths appear to be of natural causes (old age, rut mortalities, etc).

Below is a list of the bison found during the 2009 calendar year.

- 1) 1/25/2009 – 8.5 year old bison cow – died of unknown causes – died in hole in mineral lick (she was alive when first found), implant 0A00097249 (Fig. 1).
- 2) 1/28/2009 – ~17 year old bison bull – died of natural causes (old age) off 385. No eartag or implant (Fig. 2).



**Fig. 1 Bison cow (8.5 years old) mineral lick ( 1/25/09) Fig. 2 Bison bull (15-17 years old) off Hwy 385 (1/28/09)**

- 3) 2/26/2009 – 16 year old bison bull (implant AVID\*010\*348\*102\*) found dead east of Highland Creek (old age).
- 4) 3/9/2009 – 9 year old bison bull (implant 422874F77) found dead of unknown causes, off Boland Ridge trail.
- 5) 3/10/2009 – 10 year old bison cow died of unknown causes (implant 422F53712E) found at the mouth of Highland Creek canyon – west of NPS 5/NPS 6 junction.
- 6) 3/16/2009 – 26 year old bison cow (eartag IKT 8712) found near Boland Ridge trail – died of natural causes (old age).
- 7) 7/1/2009 – Bison calf found dead near Highland Creek.
- 8) 7/6/2009 – Bison calf died near Bison Flats pond – stuck in mud and became weak and died (Fig. 4).
- 9) 7/12/2009 – Bison calf hit by vehicle (MVA).



- 10) 7/15/2009 – 10 year old bison bull (eartag IWN 3752) found dead at Beaver Creek and Centennial Trail junction - “rut” mortality?
- 11) 8/4/2009 - ~ 7-10 year old bison bull found dead near Highland Creek. Most likely a “rut” mortality (no eartag or implant ).
- 12) 8/10/2009 – 13 year old bison bull (implant 422911743A) “rut” mortality – Highland Creek area.
- 13) 8/31/2009 – 11 year old bison bull found dead off NPS 5 near Lone Pine (implant 4230120712).
- 14) 10/1/2009 – Bison bull ~ 13 years old found dead in Blacktail Canyon (no eartag or implant ).
- 15) 11/8/2009 – 12.5 year old bison bull (eartag IUK 0150) found dead in Blacktail Canyon.
- 16) 11/9/2009 – 1.5 year old bison cow hit by vehicle (MVA) on the southern end of the Park and dispatched (broken leg). The bison had no eartag or implant.
- 17) 11/14/2009 – 8.5 year old bison cow (eartag IZX 9536) found dead and completely scavenged, off NPS 6 across from Boland Ridge trailhead (Fig. 3).



***Fig. 3 8.5year old bison cow (off NPS 6) scavenged  
(11/04/09)***



***Fig. 4 Bison calf died (stuck in mud?)  
(7/6/2009)***

## **ELK REPORTS:      Wind Cave National Park Elk Project with USGS (2007-2010)**

### **2009 Update:**

Monitored 38 radio collared elk (as of Jan. 1, 2009), recovered collars and investigated mortality causes on 15 of 38 elk.

Completed weekly checks of radio collared elk as far away as 35 miles WNW, 15 miles WSW, and 10 miles NNE of the park.

Weekly updates on radio telemetry status and mortality reports to the principle investigator Dr. Glen Sargeant at the USGS Northern Prairie Wildlife Research Center in Jamestown, ND and to the park biologist. Final Report from USGS will be available fall 2010.



*Biological Science Technician Duane Weber locating radio collard elk with telemetry equipment*

## **ELK REPORTS: Causes of Elk Mortalities / Collar Recoveries / Necropsies**

Hunter harvest: 5 (3 bulls, 2 cow).

Two bulls were wounding losses NOT recovered by the hunter.

Mt. Lion kill: 1 Bull

Low Battery release and recovery: 3 (2 cows, 1 bull)

Lethal recovery after failed release attempt: 3 cows

Collar malfunction: 2 - Torn elastic 1 bull. Weakening signal strength 1 cow

Roadkill: 1 cow

Performed field necropsies, collected and submitted tissue samples from 28 cervides (22 elk, 3 White-tailed deer, 3 Mule deer) to the National Park Service Biological Resource Division in Ft. Collins, CO. Samples are tested for CWD and various other diseases at Colorado State University Diagnostic Laboratory.



*Tissue samples continue to be collected in 2009 during field necropsies of dead elk*

## ELK REPORTS: CWD Testing in 2009

5 out of 15 elk samples tested positive.

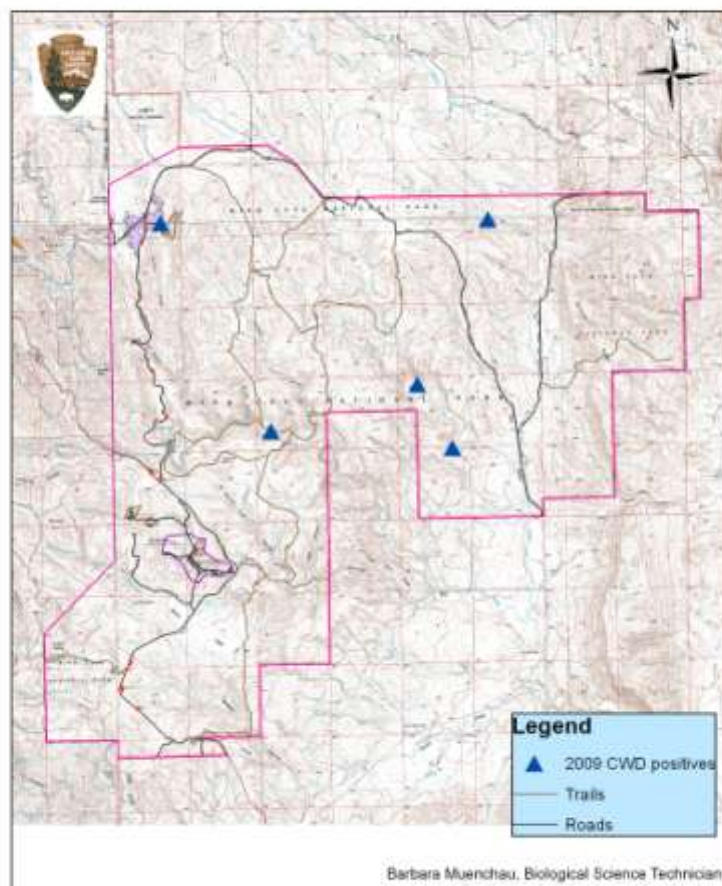
0 out of 4 White-tailed deer tested positive.

0 out of 3 Mule deer tested positive.

Total CWD positive animals tested from within Wind Cave National Park since testing began in 1998: **21 elk, 7 Mule deer, and 1 White-tailed deer.**

Removed and properly disposed of the 6 carcasses of known or suspected CWD positive animals from the park environment to reduce the spread of the disease. Most carcasses bagged and sent to the local landfill. Others delivered to Colorado State University Diagnostic Laboratory, Ft. Collins, CO where after tissue collection, carcasses disposed of in a tissue digester.

### WIND CAVE NATIONAL PARK 2009 CWD POSITIVE LOCATIONS from 1/2009 to 12/2009





## **ELK REPORTS: Elk Cow/Calf Counts**

Elk population counts conducted and calf/cow ratios calculated.

Calculated average in 2009 was 30 calves per 100 cows within the park.

Elk in the Gobbler and Beaver/Rankin area of the park was slightly higher than this average, around 33 calves/100 cows, the Boland Ridge elk was notably lower than the average at 20-25 calves/100 cows.



*Elk calf – few weeks old*



*Monitoring elk herd for cow/calf counts*

Ground estimate of summer elk population at 450-500 animals. The winter ground estimate (Dec. 2009/early 2010) of 850-900 elk is an estimated increase over last year with a gain of about 150 animals. These numbers are similar to the recent high of 850 approximately four years ago. These are best estimates only (# derived from ground counts, not aerial surveys).



*125-130 elk grazing in southeastern part of the park*



**ELK REPORTS:            Final Elk Management Plan  
   And  
   Environmental Impact Statement**

The Final Elk Management Plan and Environmental Impact Statement (489 pages), after a 5 year process, was completed in 2009. The Record of Decision (ROD) was signed on December 3, 2009. Implementation of the Preferred Alternative (Hunting Outside the Park) should begin in 2010. Planning has begun for the design to modify the boundary fence and the next round of research through Dr. Glen Sargeant with USGS in Jamestown, North Dakota.



***Bull elk in velvet - Wind Cave National Park***

## **PRONGHORN REPORT: No Survey - No Report Generated in 2009**

The annual Pronghorn Survey was not conducted in September 2009 as planned. Resource staff was too involved with "dusting" prairie dog burrows to kill fleas that could be carriers of plague, in addition to preparing for and completing spotlight surveys for black-footed ferrets.

Other dates were contemplated but inclement weather or staffing / volunteer shortages kept from completing a survey in 2009.

Pronghorn fawn survivorship into the fall was observed in the park but anecdotally it appeared survivorship was minimal this year. The last pronghorn survey was conducted on September 25, 2007. At that time the pronghorn population was estimated to be 105 – 115.

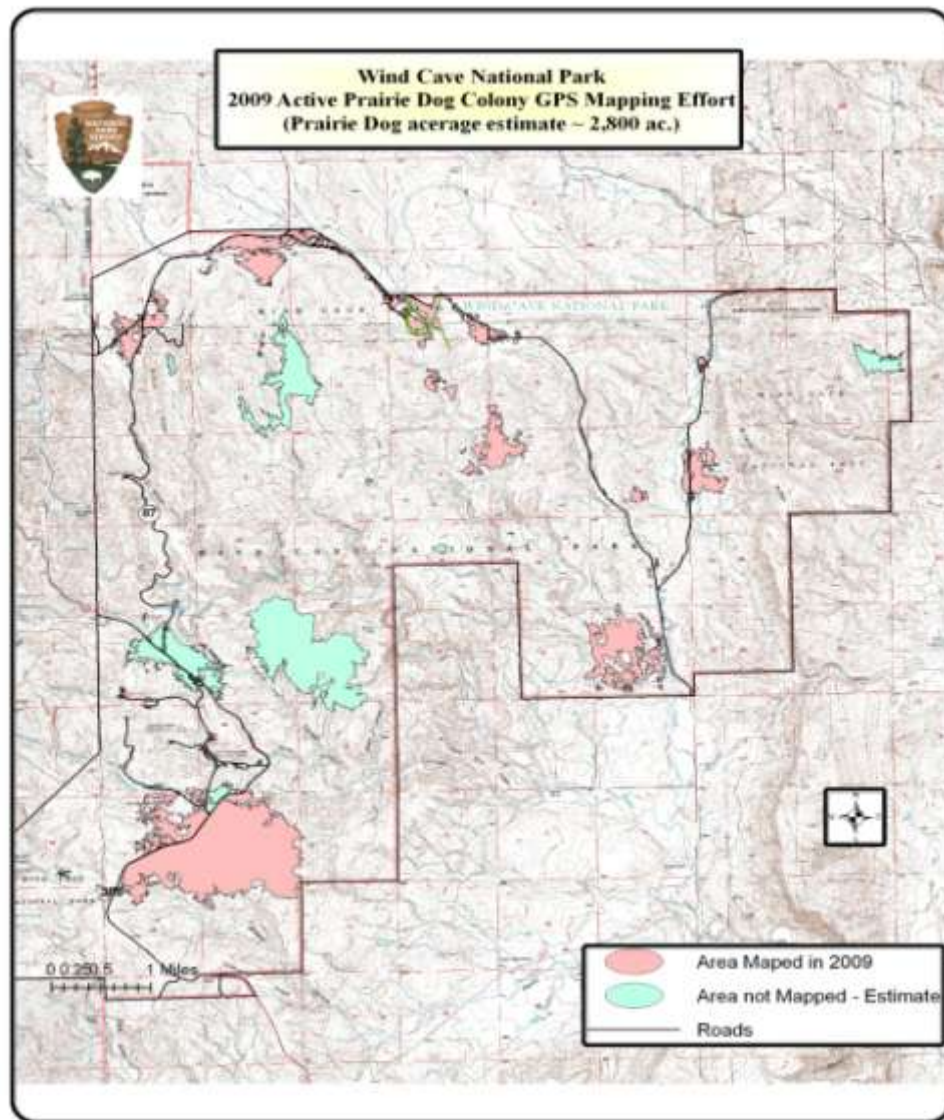
Pronghorn numbers in the park have varied from as few as 24 in 2001 to 350 in 1963.



*Pronghorn doe with fawn - Wind Cave National Park*

## **PRAIRIE DOG REPORTS: GPS Mapping Effort of Active Prairie Dog Towns**

Resource Management staff attempts to complete GPS mapping of active prairie dog colony areas every other year, with the last mapping completed in 2007. The 2009 mapping effort started on a swift note, but was forestalled by other wildlife related responsibilities. During the 2009 calendar year ~57% of the active colonies were mapped. The active prairie dog acres in the park is estimated to be approximately 2,800. The mapping that was completed in 2009 indicates varying degrees of change. There were slight increases in some areas, but decreases in others. The above average precipitation resulted in areas where prairie dogs could not keep up with clipping the tall grass and the towns either contracted or did not expand. There were also areas where the non-native plant white horehound had invaded. Approximately 300 acres of prairie dog habitat has been lost due to the invasive, monoculture growing habit of horehound. Prairie dogs are unable to keep the horehound clipped and will abandon areas where it has invaded. This mapping effort will be completed in 2010. The map below depicts the current estimate of prairie dog colonies (this also includes some of the inactive areas where horehound is found).





## PRAIRIE DOG REPORTS: Control Efforts Using Zinc Phosphide

Historically (1930's to 1997) Wind Cave National Park staff members used lethal means to periodically control prairie dogs. When the Black-tailed Prairie Dog was determined to warrant listing under the Endangered Species Act in 1999, NPS policies regarding candidate species was interpreted to limit regular control efforts. No control, either lethal or non-lethal, occurred from 1997-2005. During that time period, the Park began to explore the possibilities of reintroducing Black-footed Ferrets. However, it was readily apparent that the out-dated 1982 Prairie Dog Management Plan needed revision before a ferret reintroduction effort was initiated.

Development was soon underway and the Prairie Dog Management Plan with FONSI was completed in 2006. At that time the Park had experienced a couple years of below average precipitation and prairie dogs were expanding, resulting in complaints of prairie dogs moving onto private lands. The Park attempted live trapping and re-location, with minimal success. After consultation with the Regional Wildlife Biologist, Regional IPM Coordinator and Washington Office IPM Coordinator, the Park submitted a request to use Zinc Phosphide limiting the control effort to areas adjacent to private lands ("good neighbor policy"). Since the Park had a completed prairie dog plan that addressed these issues, the Park was given permission for limited control. In 2006, Park resource staff treated 50 acres of prairie dogs with Zinc Phosphide. 59 acres were treated in 2007; 74 acres in 2008; and 81 acres in 2009. There are no plans for lethal treatment in 2010. The number of acres in the park active with prairie dogs at the end of calendar year 2009 is approximately 2,800.

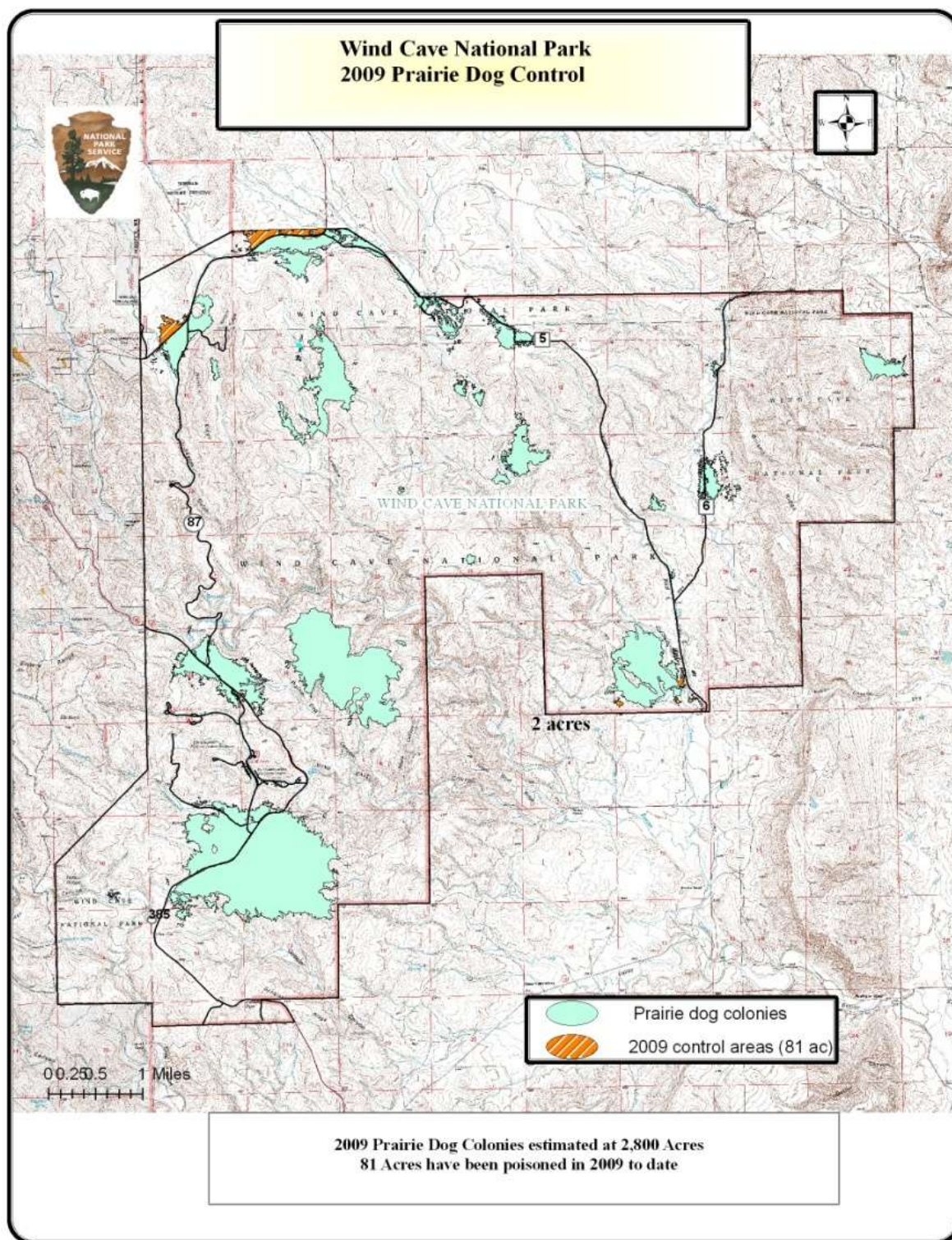


*Prairie Dog on surface after consuming Zinc Phosphide*



*Zinc Phosphide poisoned oats at edge of burrow*

Zinc Phosphide is a restricted use pesticide and requires certification/license of all applicators. The label restricts the use of Zinc Phosphide to July 1 through the last day of February. Wind Cave NP has elected to wait until October 1<sup>st</sup> before beginning its prairie dog control efforts to give the migratory, seed eating birds a chance to migrate through the area. **Wind Cave NP baiting period is from October 1<sup>st</sup> through the last day of February of the following year.** Pre-baiting with regular oats must be completed prior to placement of Zinc Phosphide bait. Once the pre-bait has been consumed, the colony can be treated with the Zinc phosphide bait.





## **PRAIRIE DOG REPORTS: Dusting Efforts to Kill Fleas in Prairie Dog Burrow**

**Over 725 acres and 33,298 burrows later the park resource staff completed its dusting efforts for the summer/fall 2009.**

In an effort to protect the Black-tailed Prairie Dog (a keystone species) and the “endangered” Black-footed Ferret, park resource management staff initiated a “dusting” effort in August 2008 in which 60,505 active and inactive burrows were dusted. In 2009, Resource Management staff felt it was imperative to again dust as many prairie dog burrows as possible, with emphasis on the Bison Flats area (where the majority of the ferrets have been found). Between August 20 and October 28, Park staff applied the insecticide, Deltamethrin (DeltaDust), to over 33,298 prairie dog burrows (active and inactive) within the Bison Flats prairie dog colony. This was a major time and resource commitment but a necessary management action to be proactive and try to prevent the Park wildlife from being infected with plague and to avoid any health risk to humans. The DeltaDust is applied into prairie dog burrows or other holes where rodents may be found through a specialized piece of equipment known as a “Techni-duster”. The motor in the duster forces the dust through the end of a wand that is placed down into the prairie dog burrow (see below) where the fleas and rodents live. The dust is meant to kill the fleas, which are the carriers of the plague. Plague has never been documented within Wind Cave National Park or the adjacent area but it has recently been found within 15-25 miles from the Park.



*Biological Science Technician Kevin Miller applying DeltaDust to prairie dog burrow*

## **Prairie Dog Reports cont'd**

### **Dusting Summary for 2009:**

Total area dusted = **725 ac.** Area dusted includes: Bison Flats east of H.385 (except did not finish far northern end and the salamander project area), area west of mixing circle gate into mixing circle and small portion adjacent to salamander project on West side.

Total burrows (includes active, inactive and other holes) = **33,298 (actual count)**

Amount of dust used = **~ 290 pounds (131542 grams)**

Amount per burrow = **~ 4 grams**

Person hours = **443** (392 hours for actual dusting and 51 hours for flagging - does not include prep, travel or cleanup) ½ hour break per 6-9 hour day subtracted.

Average # Burrows dusted per person hour (dusting and flagging hours) = **~75 burrows/hours**

Average # Burrows dusted per person hour (dusting hours only) = **~85 burrows/hours**

**Costs:** Delta Dust \$8/pound x 290 pounds = \$2,320 for our 2009 effort.

Techni duster repair -\$247.45 x 3 dusters = \$742.35

Supplies (flags) = \$100

Personnel hours (for actual dusting/flagging - does not include travel to and from or prep time) 443 person hours per 725 acres or **1.64 acre/person hour**. This is with an average 3 person dusting team and 1 flagger.

Approximate costs (supplies/materials) for Wind Cave dusting effort = **\$3,162 + personnel costs**. *The actual personnel costs is highly variable...depending on the GS level of those dusting.*



***Critters encountered during “Dusting” Effort at Wind Cave National Park***

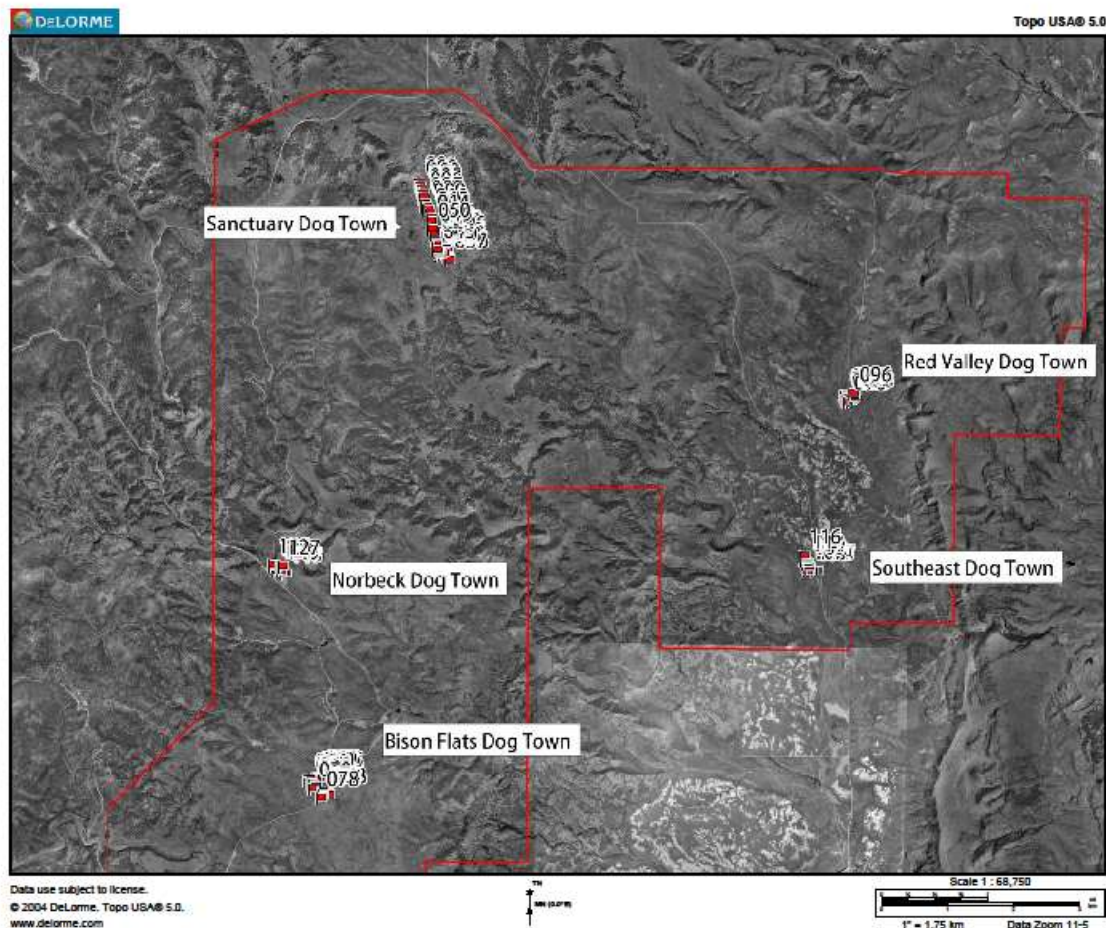




## PRAIRIE DOG REPORTS: Disease Monitoring

1) A total of 127 burrows from 5 colonies (see map below) were sampled for fleas in the summer of 2009. Fleas were collected from 23 of the 127 burrows, averaging 3.7 fleas per burrow.

Results: The flea samples identified as "hirsuta" species; plague analysis pending.



2) Visuals of prairie dog colonies (monthly attempts made and observations recorded)  
Distance to nearest plague outbreak: ~ 20 miles



## **BLACK-FOOTED FERRET REPORTS: Re-introduction Summary for 2009**

The Black-footed Ferret reintroduction effort began on July 4, 2007 with the release of 7 ferrets that were brought over from the Conata Basin located on the Buffalo Gap National Grasslands. From July through November, a total of 49 ferrets were released in the park in 2007. There have not been any ferrets brought into the park since 2007.

### **2009 SNOW TRACKING:** (total person hours = 40.5):

January 15, 2009 (3.5 person hours) – Sanctuary colony – many weasel like tracks observed

January 27, 2009 (9 person hours) Blowing snow, conditions deteriorated, no Black-footed Ferret tracks observed (Bison Flats)

April 9, 2009 (8 person hours) 1 definite set of Black-footed Ferret tracks observed (Bison Flats)



April 10, 2009 (20 person hours) Snow melting, 3-6 sets of ferret tracks (Bison Flats)

Conditions were poor for snow tracking in 2009. Only Bison Flats colony was walked (attempt made on Norbeck, but unsatisfactory conditions). On April 9<sup>th</sup>, a dead prairie dog was found near the entrance of a burrow in the Bison Flats colony. There were ferret tracks and “drag” marks that led back to a burrow ~ ¼ mile away. Minimum number of ferrets determined from snow tracking = 3-6 individuals.

*BFF tracks leading from one prairie dog burrow to another burrow*

**SPRINGTIME SPOTLIGHT SURVEYS:** April 20-22<sup>nd</sup> (only 2 straight nights – 140 person hours; 11 total participants)

Only located 5 ferrets during this survey period. We were able to identify 3 of the ferrets, all 2008 kits (2M, 1F). One male and 1 female found in the Bison Flats colony and 1 male was found in Research Reserve.



Minimum number of ferrets determined by combining snow tracking and spotlighting survey information = 4 – 7 ferrets going into the breeding season.

*Checking reader for unique identifying number. Reader left out overnight to identify ferret as it left the prairie dog burrow using micro-chip technology*

**INCIDENTAL SIGHTINGS (all Identified):** 6/15/2009 1 female ferret observed during “Night Hike”; 7/22/2009 1 male ferret observed; 7/25/2009 1 female ferret observed during a “tiger salamander survey”.

### **FALL SPOTLIGHT SURVEYS:**

September 15-18<sup>th</sup>, 2009 (3 straight nights – 362 person hours; 15 total participants)

Over this 3 night period 5 kits (3M.2F) were found/chipped, 2 adults were identified, and 9-11 other Black-footed Ferret’s observed but not captured. (1 adult female and 1 adult male were identified during the spring survey - and 1 adult female and 1 adult male were identified in July, but not re-captured in the fall survey. It is possible that four of the “unknowns” seen during the fall kit capture survey were these same animals)

Minimum number of ferrets determined by fall spotlight survey information = 16-18. This includes 1 unidentified Black-footed Ferret sighted in Custer State Park.

**2009 Minimum end-of-year Black-footed Ferret population estimate = 16-20 and an estimate of 5-6 minimum number of litters)**



*Spotlighting for BFF's at Wind Cave National Park*



*Moving BFF from trap to carrier*



*Ferret is returned to its burrow*

Once Black-footed Ferrets are captured in traps, they are transferred to a black tube and transported to a trailer specially equipped for ferret anesthesia where they are anesthetized, given a brief physical exam, vaccinated, and blood is drawn. They also receive a micro-chip with an individual Identification number.

After the ferrets have awakened from the anesthesia, they are returned to the burrow they were trapped from.

**LIST OF ALL FERRETS IDENTIFIED IN 2009:**

Date	Sex	Ferret ID	Age	Implant#	Colony	UTM (NAD 83) 13
4/22/2009 6/15/2009 9/15/2009	F	08-002	Adult	104*782*033	Bison Flats Bison Flats Bison Flats	623147, 4822797 622844, 4822477 622939, 4823112
4/21/2009	M	08-012	Adult	104*632*853	Bison Flats	622709, 4825693
4/21/2009	M	08-014	Adult	104*632*063	Bison Flats	624143, 4822317
7/22/2009	M	07-009	Adult	100*541*094	North Boundary	622914, 4832708
7/25/2009	F	07-084	Adult	100*564*079	Bison Flats	621669, 4821218
9/15/2009	F	5489	Adult	107*116*882	Bison Flats	623367, 4822179
9/15/2009	F	09-001	Kit	104*831*830	Bison Flats	622282, 4821707
9/15/2009	M	09-002	Kit	104*812*801	Pringle	621972, 4831845
9/16/2009	M	09-003	Kit	104*794*326	Bison Flats	622005, 4822153
9/16/2009	M	09-004	Kit	104*634*779	Bison Flats	623455, 4822188
9/17/2009	F	09-005	Kit	104*786*795	Bison Flats	621524, 4821726
9/17/2009	F	09-005	Kit	104*786*795	Bison Flats	621524, 4821726

*All ferrets observed during 2009 calendar year - Spring survey, Incidental sightings/i.d., and Fall survey*

**2009 Miscellaneous Observations:**

- 1) A captive bred female, released during Jeff Corwin filming session on 9/13/07, was located on 11/2/07, 10/7/08 and 9/15/09. All locations on Bison Flats Prairie Dog Town.
- 2) A female kit that was born the summer of 2008 was located on 10/5/08, 4/22/09, 6/15/09 and 9/15/09. All locations on Bison Flats Prairie Dog Town.
- 3) A male ferret from Conata basin was re-located to Wind Cave NP (Sanctuary Prairie Dog Town) on 10/3/07 and was found 7/22/09 on the North Boundary Prairie Dog Town.
- 4) A female from Conata Basin was released on 9/25/07 and was located on 11/16/07, 10/7/08 and 7/25/09. All locations on Bison Flats Prairie Dog Town.

**ENVIRONMENTAL EDUCATION / OUTREACH PROGRAMS CONDUCTED 2009:**

The Park conducted 9 “Prairie Night Walk” programs for 211 people. The night walks were well received averaging 23 people on each program that started at 9:00 and ended at 10:30. One ferret was observed during a hike in June, and ~40 people (two groups) were able to see it. A transponder reader was set, left over night and a reading obtained (female born in 2008). This same ferret was captured later during the fall survey/kit capture (9/15/2009). Though the main draw of the prairie night walks is for visitors to see a ferret, Park visitors do not seem to be disappointed if they don’t see a ferret since there are so many wonderful sights and sounds to experience at night on the prairie. There are visitors that travel to the Park specifically to have

an opportunity to see a Black-footed Ferret. The Park plans to continue this program in 2010. 1 press release distributed to local papers.

The Park offered daytime ferret/prairie dog talk/hikes about once a week. They were offered 10 times but the Park hikes are not real popular so it was only presented four times to a total of 19 people. The Interpretive Division also presented 2 separate discovery programs about ferrets that were presented an average of 3 times per week, averaging 25 people on each program for a total of about 1000 people. The Black-footed Ferret is an integral part of the Parks Environmental Education Program that reaches 800-1000 K-8<sup>th</sup> grade. The “interactive” Black-footed Ferret exhibit developed in 2008 remained a very popular exhibit with the younger groups and adults as well. The main lobby Black-footed Ferret display is visited by the majority of visitors.

Presentation on the “Black Footed Ferret Reintroduction at Wind Cave National Park” was presented at the “Carnivores 2009” conference by the NPS Regional Wildlife Biologist.

Resource staff provided a mentorship for a local high school student working on his senior project. Student updated ferret monitoring equipment inventory and also took part in a fall spotlight survey. Unfortunately he did not see any ferrets during his hike on the prairie but he did get to see a coyote and bison while listening to elk bugling throughout the evening. In his thank you note that was sent to the park at the end of his project he stated "I enjoyed every minute of it. It was an experience that I have taken to heart and has really helped me find an interest and a possibility of what I want to do in college".



***Black-footed Ferrets at Wind Cave National Park***



# **PROTOCOL FOR HANDLING BLACK-FOOTED FERRET CARCASSES AND BLACK-FOOTED FERRETS THAT ARE INJURED OR IN NEED OF RELOCATION**

## **GUIDANCE FOR WIND CAVE NATIONAL PARK PERSONNEL 2009**

Background: This Federal and State listed Endangered species is the subject of several reintroduction efforts in South Dakota. At present, two National Park entities are involved in reintroduction projects in the state –Wind Cave National Park and Badlands National Park.

This document presents a protocol to address likely situations where individual ferrets are reported or turned in to Park personnel. All possible scenarios cannot be described, and the best judgment of field staff will be relied upon, considering both the importance of recovery projects and the humane treatment of individual animals. If subsequent questions arise about handling of a particular situation, discussions will occur with Park Resource Management Staff.

**The Recovery Coordinator (Paul Marinari, 970-897-2730 ext.24), Project Leader (Scott Larson, 605-224-8693) and Resident Biologist in Charge (Dan Roddy, 605-745-1157 or Barb Muenchau, 605-745-1150) must be contacted within 24 hours when mortalities occur. Disposition of mortalities will be at the direction of the Recovery Coordinator.**

### **BLACK-FOOTED FERRET SIGHTING**

Document all sighting's of Black-footed Ferrets and notify Dan Roddy (605-745-1157) or Barb Muenchau (605-745-1150). Document the date, time, location and any other notable information.

### **IF A BLACK-FOOTED FERRET IS FOUND DEAD OR INJURED**

Do not handle it. Wounded ferrets will bite. A dead ferret may have disease-bearing fleas on its body. Contact Dan Roddy or Barbara Muenchau and inform them of the discovery. If the animal is severely injured, the decision to euthanize the animal will be made during the field assessment and discussion with Veterinarian. The animal will be humanely euthanized in such a way as to also minimize damage to the carcass.

Dr. Margaret Wild (BRMD, Ft. Collins) is the National Park Service Veterinarian of Record for Black-footed Ferret's in the Park. The Park also has a verbal agreement with Dr. Sheila Lindsay (Hot Springs Veterinarian) for emergency Black-footed Ferret medical care. If the animal is injured in such a way that its survival in the wild is questionable, but it may make a contribution in a captive breeding or education role, the Park will coordinate with the Recovery Coordinator.

If you are unable to locate Resource Management staff, contact Visitor/Resource Protection. If there is concern that the carcass may be in danger of further damage (such as being run over by vehicles) or of being scavenged (predators in the area), retrieve all parts of the ferret. Rubber gloves should be worn when handling the ferret. Use of a dust mask is optional. Place all parts of the ferret in a ziplock bag and double bag it. Mark the bag with date, time, location, comments (such as closest prairie dog town) and name of collector with a permanent marker. If possible, note exact location on a map. Place the bag in the large freezer in "window house". Notify Dan Roddy or Barbara Muenchau immediately.

Resource Management will send the animal to the Recovery Coordinator for testing to determine the cause of death. The Recovery Coordinator will then be responsible of disposing of the animal.

### **UNINJURED BLACK FOOTED FERRET REPORTED ON PRIVATE LAND WITH REQUEST THAT THE ANIMAL BE RELOCATED**

Contact Dan Roddy or Barb Muenchau and inform them of the discovery. They will contact the landowner and attempt to trap, identify, and re-locate the ferret back to the Park.

### **CARCASS TURNED IN TO WICA**

Since the animals are considered property of the FWS, we are required to notify them that we have a carcass. Contact Resource Management and they will send the animal to the Recovery Coordinator for testing to determine the cause of death. The Recovery Coordinator will then be responsible of disposing of the animal. If Resource Management Staff is not available, place in zip lock bag per instructions mentioned above.

### **FERRET POSSESSION AND MORTALITY**

Black-footed ferrets within the boundaries of Wind Cave National Park are considered endangered and authorized under a 10(a)(1)(A) scientific experimental/recovery permit issued under the Endangered Species Act. This permit allows experimental reintroductions to occur within park boundaries and provide mechanisms to ensure that private property interests outside

the park are not impacted. The 10(a)(1)(A) scientific experimental/recovery permit stipulates that the unavoidable and unintentional take (e.g., killing or injuring) of Black-footed Ferrets would not be in violation of the Endangered Species Act, when such take was determined to be non-negligent and incidental to an otherwise legal activity.

The USFWS does require that all known Black-footed Ferret injuries and mortalities (private or public lands) be reported to the proper authorities as a means of establishing the circumstances leading to take. Reintroduced Black-footed Ferrets may be captured and relocated to: 1) avoid conflict with human activities; 2) relocate a Black-footed Ferret that has moved outside the Park when removal is necessary to protect the Black-footed Ferret or is requested by the affected landowner, or 3) to improve Black-footed Ferret survival and recovery prospects.

Wind Cave National Park  
Dan Roddy  
Work: 605-745-1157  
home: 605-673-4769  
[dan\\_rodny@nps.gov](mailto:dan_rodny@nps.gov)



Wind Cave National Park  
Barbara Muenchau  
Work: 605-745-1150  
home: 605-745-3254  
[barbara\\_muenchau@nps.gov](mailto:barbara_muenchau@nps.gov)

## **HERPS: Tiger Salamander Study at Wind Cave National Park (by Dan Licht)**

On the nights of June 15-17 and June 22, 2009, crews conducted spotlight surveys for Tiger Salamanders in the Bison Flats Prairie Dog Town. The purpose of the study was to determine if the insecticide deltamethrin--which is applied to prairie dog burrows in an effort to prevent plague epizootics--is having harmful effects on Tiger Salamanders that reside in the burrows. A series of paired study plots were established to serve as control and treatment sites and the survey was designed to look at pre- and post-treatment salamander abundance.

A total of 62 salamanders were observed. Only about 4% of the inspected burrows were occupied. This is noticeably less than what was observed earlier in the year (incidental to a Black-footed Ferret survey) and in surveys in 1996-98 (Kolbe et al. 2002). Salamanders respond strongly to precipitation patterns so it's possible that rainfall played a role in the reduced sighting rate. The unexpectedly small number of salamanders makes statistical analysis of the results inappropriate. However, salamanders were observed in both the control and treatment plots and in the treatment plots before and after application of deltamethrin. Furthermore, salamanders were observed during the April Black-footed Ferret surveys in portions of the prairie dog colony that had been treated with deltamethrin the previous summer. This weak evidence suggests that even if deltamethrin does have an impact on tiger salamanders it is not catastrophic in terms of population abundance, but much more work remains to be done.

The 2009 survey was a collaborative effort with partners from Black Hills State University, the University of South Dakota, the U.S. Forest Service, and Rocky Mountain Bird Observatory helping with the effort. It is anticipated that the survey will be repeated in 2010. Furthermore, the National Park Service is working closely with Black Hills State University and the NPS-Biological Resources Management Division to start a graduate student project to more thoroughly and systematically investigate the impacts of deltamethrin on Tiger Salamanders.



*Tiger Salamander (Ambystoma tigrinum) outside of prairie dog burrow at Wind Cave NP*



## **HERPS: Autonomous Recording Units (ARU'S) Set Up In Park**

Wind Cave National Park Resource Managers have been interested in verifying the presence and breeding status of the Northern Leopard Frog, Northern Saw-whet Owl and Flammulated Owl.



In 2009, the Northern Great Plains Inventory and Monitoring Program loaned the Park two Autonomous Recording Units (ARU) to record biological vocalizations to aid in the verification of these species. The ARU's were placed on tri-pods along Beaver Creek and near the "Herp Hole" area in the southwestern part of the park in Cold Brook Canyon, and collected sound recordings continuously from March 6<sup>th</sup> – June 21<sup>st</sup>.

The audio files have been downloaded from the ARU's and are in the process of being interpreted.



There are several thousand hours of recordings yet to interpret, and results are pending. There is evidence of the 2 areas being used by Saw-whet Owls and/or Northern Leopard Frogs but unconfirmed by the park at this time.

These habitats are also suitable for Flammulated Owls, which have never been observed in the park but have been observed a few miles from the western park boundary. In addition, the "Herp Hole" area has historically had nesting Golden Eagles, Coopers Hawk and Red-tailed Hawk that may be verified through the recording devices.

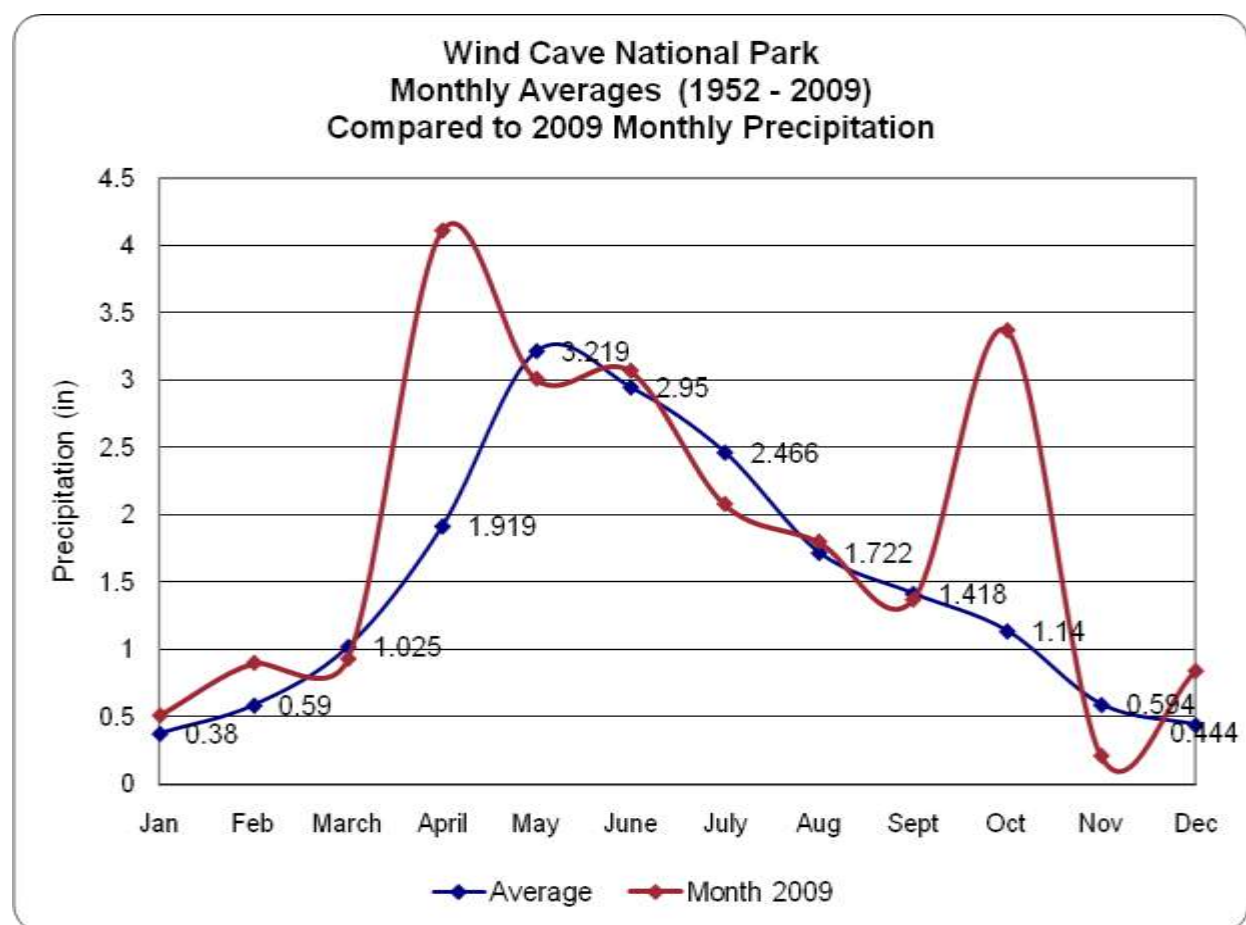
Photos above:

***Automated Recording Unit (ARU) deployed in March 6, 2009 near the "Herp Hole" along South Cold Brook Canyon by Scott Caesar, staff member with the Northern Great Plains Inventory and Monitoring Program. Unit was removed on June 21, 2009***

## PRECIPITATION: Wind Cave National Park 2009 Report

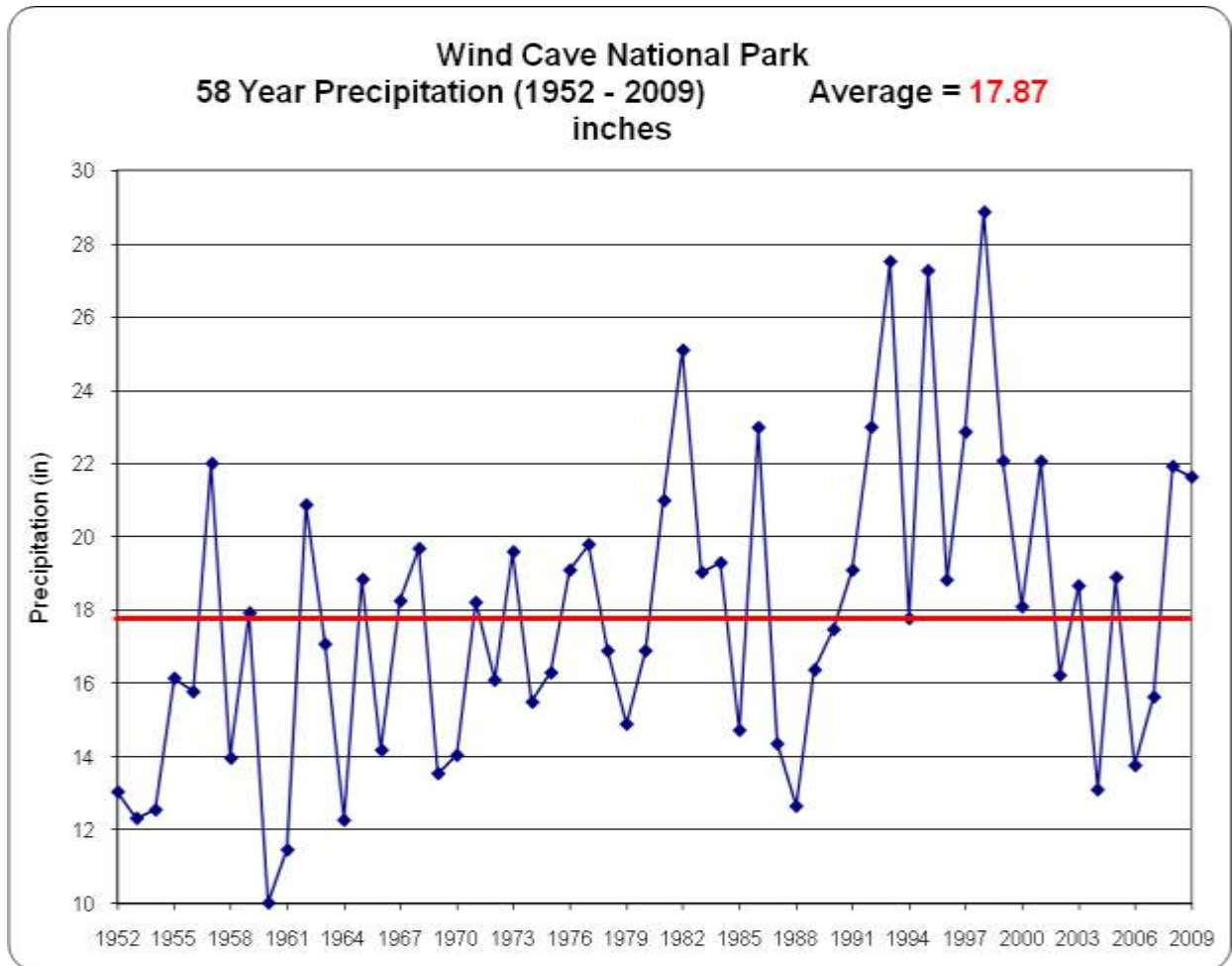
Wind Cave National Park staff members have been collecting precipitation data since rain gauges were first installed in 1940. Precipitation was documented on a monthly basis from 1940 to 1946, then only sporadically from 1947 to August, 1951. Since then, continuous monthly precipitation data has been recorded, giving us fifty-eight years of information.

As would be expected in the Great Plains, the majority of our precipitation falls from April to September, with the greatest amount being received in May. Figure 1 represents the 58 year monthly precipitation averages received in the Park compared with the monthly precipitation received in 2009. The least amount of precipitation is typically received in January.



*Figure 1 58 year monthly precipitation averages compared with 2009 monthly precipitation received*

As can be seen in Figure 2, Wind Cave annual precipitation can fluctuate greatly as is typical in the Great Plains. In the last 58 years, precipitation has ranged from a low of 10.02” in 1960, to a high of 28.87” in 1998. The Park 58 year **annual average** is **17.87 inches**. The Park received **22.20 inches** of precipitation in the **2009** calendar year.



*Figure 2 1952-2009 annual precipitation (58 year average = 17.87)*

This precipitation data, along with the daily high/low temperature and snowfall measurements, is the official Wind Cave weather submitted to the National Weather Service. The Park also has extensive monthly temperature data. Resource Management staff is in the process of compiling this data.

## RESEARCH: CY2009 Wildlife Related Research Projects

### Complete project proposals are on file in Resource Management Office

It wasn't that long ago that National Parks had a documented indifference (even hostility) towards the support of basic research, which the Park Service has been criticized for. This was blamed on the traditional emphasis on scenery and tourism. Recent efforts have been made to improve this image, including; Congressional mandate to support research, a major budget initiative to support scientific understanding and management of Park resources as well as improve research facilities, and the establishment of CESU's (Cooperative Ecosystem Studies Units). While this is an improvement, many Research Coordinators and Resource Managers still have to "fight" for support from their respective Parks. Wind Cave National Park has been extremely fortunate to have the superintendents support, although access to a "research bunkhouse" that allowed for low cost housing to the researchers is no longer available. Wind Cave National Park has received a wealth of information through past research projects.

*"Decision makers and planners will use the best available scientific and technical information and scholarly analysis to identify appropriate management actions for protection and use of park resources". – NPS Management Policies*

The Park had 32 research projects in progress during the 2009 calendar year; 11 of which were wildlife related. Below is a brief description of the wildlife related projects.

**Study Title:** EVALUATING HABITAT SUITABILITY, POPULATION SIZE, AND PREY USE OF BOBCATS (*Lynx rufus* Schreber, 1776) IN SOUTH DAKOTA. **Investigator:** [Cory Mosby](#)

**Purpose of study:** Little information exists on the distribution and population size of bobcats (*Lynx rufus*) in South Dakota. Bobcats occupy habitats within the three regions (Black Hills, western prairies, eastern prairies) that characterize the state. However, it is unknown how bobcats utilize the landscape or their effects on other wildlife populations (i.e., prey species) within the state. Information obtained from this study will enhance understanding of bobcat distribution, habitat selection, prey use, and population size in South Dakota. Blood samples will also be collected to test for various diseases – especially plague, canine distemper and tularemia (all diseases that affect black-footed ferrets)



**Study Title:** INFLUENCES OF SPORT HARVEST AND HOUSING DENSITY ON MOUNTAIN LION ECOLOGY. **Investigator:** [Brian Jansen](#)

**Purpose of study:** The role of human activities in mountain lion ecology has not been examined. We plan to study the influence of sport-harvest has on mountain lion mortality, as well as other population parameters, such as reproduction and juvenile survival. We also plan to investigate the role of humans living in rural areas and in varying densities and mountain lions survival and disease exposure. This information will be informative to agencies like the National Park Service so that they can evaluate the potential impacts of activities to manage both people and natural resources within specific park boundaries.



Because Wind Cave National Park is smaller than typical mountain lion home areas, mountain lions found within park boundaries are affected by human activities from inside and outside of the park. Knowledge of the role human activities are having on mountain lions outside the park, will give managers insight into what factors are influencing mountain lions found inside the park. Collared Mt. lions can be found in the Park.

**Study Title:** RISK OF PLAGUE TO PRAIRIE DOG POPULATIONS IN FIVE GREAT PLAINS' PARKS.

**Investigator:** [Hugh Britten](#)

**Purpose of study:** Prairie dogs are an especially important natural resource and are frequently cited as a keystone species. Plague is an exotic disease that can decimate prairie



dog populations and has been cited as a primary factor threatening prairie dog viability. Five Northern Great Plains' parks, some with significant prairie dog complexes, are on the edge of the known plague zone. It is not known if the disease is already present in the parks at background levels, if the species of fleas that transmit the disease occur in the parks, if the distribution of prairie dogs in the parks can exacerbate the spread of the disease, and if the genetic

characteristics of the prairie dogs make them vulnerable to the disease. Both fleas and prairie dogs will be sampled from the same colonies each summer of the study to provide for direct comparisons between flea and prairie dog population genetic structures. A nested PCR procedure will be used to assay each flea for *Y. pestis* (i.e., plague) DNA.

**Study Title:** THE ASSESSMENT OF SPLEEN AS AN ALTERNATE TISSUE FOR HUNTER-HARVEST SURVEILLANCE FOR CHRONIC WASTING DISEASE **Investigator:** [Mike Miller](#)

**Purpose of study:** The Colorado Division of Wildlife (CDOW) is interested in finding an alternate tissue for our hunter-harvest surveillance for chronic wasting disease (CWD). The goal is to find an ungulate tissue type that is easy for hunters to collect and transport yet achieves the same sensitivity and specificity as retropharyngeal lymph nodes (RPLN) using BioRad® ELISA. Studies looking at prion accumulation patterns (by immunohistochemical staining) in orally infected mule deer (Fox, 2006) have shown that spleen contains PrP(CWD) in CWD infected animals. In preliminary studies using post-mortem samples from mule deer, ELISA results were found to be similar between RPLN and spleen. Spleen samples from WICA CWD positive cervids will be used in this study.

**Study Title:** THE ASSOCIATION OF MICRONUTRIENTS AND PRION GENETICS WITH THE PREVALENCE OF CHRONIC WASTING DISEASE IN CAPTIVE AND FREE-RANGING POPULATIONS OF ROCKY MOUNTAIN ELK. **Investigator:** [Terry Spraker](#)

**Purpose of study:** The purpose of this study is to describe the relationship between CWD status, genetic composition of the prion gene and micronutrient status in a sample of captive and free-ranging Rocky Mountain elk. Analyses will be performed using archived samples from 50 captive elk with evidence of the abnormal isoform of the prion protein associated with CWD (PrPCWD) and 500 captive elk that do not have detectable PrPCWD. This is proposed to be done in parallel with samples from Wind Cave National Park and Rocky Mountain National Park where CWD has been detected in free-ranging elk. Additionally samples from Yellowstone National Park and the state of Montana, where CWD has not been found, will be analyzed to compare results between geographic regions as well as CWD status. Liver and brain micronutrient levels will also be measured and compared to CWD status. Samples from WICA - CWD positive cervids will be used in this study.

**Study Title:** EVALUATING MONITORING OPTIONS FOR LAND BIRDS IN THE NORTHERN GREAT PLAINS NETWORK **Investigator:** [Marcia Wilson](#)

**Purpose of study:** Given that land birds are good indicators of the effects of local and regional changes, the Northern Great Plains Inventory and Monitoring Network has identified land birds as a Vital Sign for long-term monitoring. Although the variable circular plot method is a commonly used protocol, the drawback is that many detections are needed to conduct the analysis. This approach can be used to detect trends for the most common bird species but, may have low power to detect trends for less common species. Specific objectives include the following:

- 1) Examine feasibility and develop sampling strategies for a combined protocol allowing monitoring of density for common species and of occupancy dynamics for uncommon species.
- 2) Obtain a large number of on-the-ground surveys by highly trained observers as part of the NPGN's examination of the utility of on-the-ground observers.
- 3) Explore the potential for integration of probabilistic density/occupancy monitoring with existing park monitoring efforts (traditional and off-road Breeding Bird Survey-type routes).

**Study Title:** DEVELOP FORAGE PRODUCTION AND ALLOCATION MODEL FOR WIND CAVE NATIONAL PARK **Investigator:** [Joshua Millsbaugh](#)

**Purpose of study:** Wind Cave National Park has a finite amount of forage for the wildlife utilizing park lands. Wildlife in too high of numbers may create excessive use of available forage. Consequently the abundance of several foraging species and their forage must be actively managed to maintain a healthy balance. To address herbivore management concerns, we will (1) assess and model predictors for forage production for rangeland and woodland habitats; (2) estimate food habits of bison and elk; and (3) develop a forage allocation model and estimate carrying capacity based on forage availability and nutritional constraints. A forage allocation model will aid managers in understanding the forage available and the proper allocation of vegetative resources to the major wildlife using these resources.



**Study Title:** BIOLOGICAL SURVEYS OF POOLS IN WIND CAVE AND RELATED GROUNDWATER ACCESS POINTS **Investigator:** [Jean Krejca](#)

**Purpose of study:** Cave pools and groundwater in Wind Cave National Park are part of the Madison Aquifer and support an abundance of macroinvertebrate and microbiological fauna. Proposed plans to establish large wells adjacent to the park might reduce or alter biological resources within the cave and aquifer through a drawdown of groundwater. Researchers will search for fauna in pools inside Wind Cave and through any accessible wells or springs in the immediate area.



**Study Title:** PILOT STUDY OF THE EFFECTS OF DELTAMETHRIN ON SALAMANDERS IN PRAIRIE DOG TOWNS **Investigator:** [Dan Licht](#)

**Purpose of study:** Wind Cave National Park plans to dust prairie dog towns in the late summer/early fall of 2008 and 2009. This pilot study has been integrated with that effort so that some plots within the project area are dusted (i.e., treatment plots) and others are left undusted (i.e., control plots). It also leaves undusted a 21-

ha area which: 1) provides an uncompromised site for the “Biggins” study, and, 2) provides a worst-case refuge for salamanders should the effects of dusting be catastrophic on that species.

Surveys for salamander abundance will be conducted using spotlight counts (Kolbe 2002). Surveys will be conducted: 1) immediately prior to dusting (estimated to be late August), 2) a few days after dusting, and 3) the following spring. Observers will walk parallel transects within a plot in an attempt to shine a light into all burrows in the plot. Holes occupied by salamanders will be flagged and the location recorded with GPS equipment.

**Study Title:** STREAM FISHERIES SURVEY **Investigator:** [Michelle Bucholz](#)

**Purpose of study:** One site in Beaver Creek East of the Centennial Trailhead and one site in Cold Spring Creek South-East of the trailhead will be sampled on June 16th 2009. All sample reaches are 100 m in length. Block nets at the upstream boundary are used to prevent fish from emigrating or immigrating within the sample site. One pass was made in tributary creeks with one backpack electrofishing unit. Captured fish may be anesthetized with carbon dioxide, measured to the nearest millimeter total length, weighed to the nearest gram, and returned to the stream. Relative abundances will be compared to historical data from individual sites when historical sampling occurred within comparable months. In addition, pH, temperature, and specific conductance will be measured and recorded. The final report is pending.

**Study Title:** PREY ITEMS OF NESTING RAPTORS AT WIND CAVE NATIONAL PARK

**Investigator:** [Dan Licht](#) (NPS Photo –red-tail with prairie dog)

**Purpose of study:** Wind Cave National Park contains a variety of habitats including prairie dog towns and ponderosa pine forests. Raptor nests (e.g., red-tailed hawk, golden eagle) located deep in the forests have been observed with prairie dog remains in them. It has been speculated that the primary prey brought to some of these nests are prairie dogs (the ponderosa pine forests are comparatively poor in raptor prey species), even though some of these nests are a mile or more from the nearest prairie dog colony.



The purpose of this study is to document the prey items brought to raptor nests at Wind Cave National Park. A better understanding of the prey used by raptors at the park can lead to more enlightened management and conservation of the park’s resources and biological diversity.

**AGREEMENTS:            2009 Wind Cave National Park  
Wildlife Related Agreements**

- 1) **CA (Texas A&M University) – Develop Genetic Based Conservation Management Program for the Wind Cave NP Bison Herd** - Texas A&M University is currently using modern genotyping technologies to determine the breeding structure (pedigree analysis) of the WCNP bison herd and to identify optimum management strategies for long-term conservation efforts
- 2) **CA (Prairie Wildlife Research, Inc.)** – Provide Black-footed ferret services, consulting, equipment and supplies. Copy of annual report is available.
- 3) **CA (The American Prairie Foundation)** – Goal of this agreement is to facilitate the establishment of a partner herd that is genetically pure and managed for conservation on APF lands and that will contribute to the long term conservation of bison and the security of the WICA population. *Though this Agreement has not officially been cancelled, APF recently decided to add bison from Elk Island. If the Elk Island and Wind Cave bison are mixed, the APF herd will no longer be considered a “partner herd” for Wind Cave.*
- 4) **IAA (USGS Northern Prairie Wildlife Research Center in Jamestown, ND)** – Elk Movements & Distribution at Wind Cave NP: Implications for Population Control & CWD Management (Final Report will be available in October 2010). USGS is using relocations of elk marked with GPS telemetry collars to delineate the area affected by elk associated with WICA, describe movements of elk across park boundaries, and identify areas that are most likely to sustain undesirable impacts. This information is key to 1) an objective understanding of management issues, 2) the development of monitoring strategies for elk and effects of elk, and 3) the identification of biological constraints on herd management.



## **PUBLIC CONTACTS/MEETINGS/PRESENTATIONS/RESEARCH PAPERS:**

- (1) Sargeant, G. A., Michael W. Oehler, and D. E. Roddy. Historical and scientific perspectives on the management of reintroduced elk at Theodore Roosevelt and Wind Cave National Parks. Central Mountains and Plains Section of The Wildlife Society. 10-12 August 2005. Medora, North Dakota (INVITED).
- (2) Weber, D. C., D. E. Roddy, and G. A. Sargeant. 2009. Information needs for management of elk associated with Wind Cave National Park. Annual Conference, South Dakota Chapter of The Wildlife Society, 23-25 February, 2009. Oacoma, South Dakota.
- (3) Sargeant, G. A., M. W. Oehler, D. E. Roddy, D. C. Weber, and C. L. Sexton. Implications of elk movements for herd and habitat management in Midwestern parks. Biennial Conference of The George Wright Society. 2-6 March, 2009. Portland, Oregon.
- (4) Sargeant, G. A., D. E. Roddy, and D. C. Weber. Effects of chronic wasting disease and mountain lions on mortality of elk at Wind Cave National Park, South Dakota. Sixteenth Annual Conference of The Wildlife Society, 20-23 September 2009. Monterey, California.
- (5) "New Records of Hair Follicle Mites (Demodecidae) from North American Cervids" Journal of Wildlife Diseases, short notes. Co-author
- (6) "Ten + Years of Chronic Wasting Disease Surveillance at Wind Cave National Park" 3<sup>rd</sup> International CWD Symposium. Park City, Utah. Poster presentation.

"Wind Cave National Park Elk Telemetry Project" Oacoma, SD. Best open presentation award winner at the 2009 South Dakota Chapter of The Wildlife Society meeting.

Career fair at Custer High school. "Wildlife as a Career". Custer, SD. 120 students.

Hot Springs Mason Dinner speaker. "Wind Cave National Park Elk Project". Hot Springs, SD. 65 adults.

South Dakota Game Fish and Parks Game Commission meeting: Wind Cave Elk Project and CWD surveillance. Custer State Park. 30 adults.

"Wind Cave Elk Telemetry Project" Custer Rotary Club Custer, SD. 27 adults.

Campfire ranger program at Elk Mt. Campground. "Wind Cave Elk Project" 34 adults and children

"Bison Management at Wind Cave National Park" Custer, SD Rotary Club 20 adults

Presented resource management issues to seasonals, all new employees training tour and advanced ranger training for returning and lead interpretive rangers.

Led field trip for Natrona County School District from Casper, Wyoming (Star Lane Center) (20 students). Discussed prairie dog and bison interactions.

Interviewed by Toni Robino for Jeff Corwin's new book "100 Heartbeats". Provided information dealing with our ferret reintroduction effort and provided 2 photos for the book.

Interviewed by Patrick Springer (Bismark, ND Newspaper) to discuss the parks' bison herd and how they are being managed.

Interviewed by SD Public Radio to discuss the parks' ferret reintroduction effort.

Interviewed by local television station – discussed the parks' Christmas Bird Count.

Attended Global Climate meeting in Denver, Colorado (April 2009).

Attended the annual Project Approval Committee meeting (PAC) for the Rocky Mountain Elk Foundation (RMEF) in Rapid City, SD (7/16/09). Wind Cave NP staff member is the NPS rep that is part of the committee that reviews funding proposals for the RMEF.

Part of the Black-footed Ferret subcommittee – sat in on conference call, did not attend meeting in New Mexico due to travel constraints.

## **MISCELLANEOUS:**

### **Information Requests**

Over 90 information requests responded to and provided maps/reports/info regarding diseases, bison, GIS layers, fencing, prairie dog, ferrets, bison computer program, genetics, research, dusting, bird/bat netting/banding, etc.

Information sent to Park staff, other NPS units, I&M, Regional and WASO staff, State agencies, USFS, APHIS and USFWS, private citizens, Universities, students, conservation groups etc.

### **Research Coordinator Responsibilities**

Completed Environmental Screening Forms as needed.

Provided information, assistance, processed applications, issued permits and provided oversight for **35** research projects in FY 2009 (8 of which were new research projects). 11 of the projects are wildlife related

Investigators Annual Report (IAR's) – communicated with and assisted researchers regarding IAR completion and submittal. 99% of IAR's were completed.

### **Volunteer Hours**

Over 50 people volunteered for wildlife projects during FY09 totaling 995 hours. \$150 spent for housing. Detailed report submitted to Volunteer Coordinator. \$800 received from volunteer account to purchase ferret supplies.